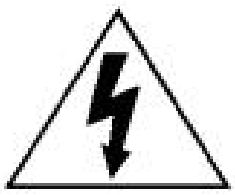
BEST DIGITAL SECURITY GUARD SERIES

16CH / 8CH / 4CH MPEG-4 DVR MANUAL

Please read instructions thoroughly before operation and retain it for future reference.

The image shown above may differ from the actual product appearance.

IMPORTANT SAFEGUARD



CAUTION

RISK OF ELECTRIC SHOCK

CAUTION:

To reduce the risk of electric shock, do not expose this apparatus to rain or moisture.
Only operate this apparatus from the type of power source indicated on the label.
The company shall not be liable for any damages arising out of any improper use,
even if we have been advised of the possibility of such damages.

Graphic Symbol Explanation

	The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
	This exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.
	All lead-free products offered by the company comply with the requirements of the European law on the Restriction of Hazardous Substances (RoHS) directive, which means our manufacture processes and products are strictly “lead-free” and without the hazardous substances cited in the directive.
	The crossed-out wheeled bin mark symbolizes that within the European Union the product must be collected separately at the product end-of-life. This applies to your product and any peripherals marked with this symbol. Do not dispose of these products as unsorted municipal waste. Contact your local dealer for procedures for recycling this equipment.
	CE Mark This apparatus is manufactured to comply with the radio interference requirements.

Disclaimer

We reserve the right to revise or remove any content in this manual at any time. We do not warrant or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of this manual. The content of this manual is subject to change without notice.

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Version

Firmware: 1143-1011-1021-1013-M1-6C1B
Licensed Software AP: 0066

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1. OVERVIEW

1.1 Product Description

This MPEG4 DVR model can accommodate up to 3 HDDs, or accommodate 2 HDDs and connect 1 independent disk array depending on your needs (16CH & 8CH only). To quickly backup, a DVR writer (optional) and USB interface are built in for your choices except for network backup. Besides, this MPEG4 DVR has many advanced features, such as remote independent operation, R.E.T.R. (remote event trigger recording) and graphical multilingual OSD.

1.2 Features

- MPEG4 Technology
  - MPEG4 Compression format providing crystal clear images with real time performance
  - MPEG4 web transmitting for faster transmission and clearer images via network
- Graphical and Multilingual OSD Interface
- Remote Independent Operation
  - Allows single-channel viewing of live displays without changing display settings on the licensed software AP provided
- Intelligent Motion Trigger Recording
  - R.E.T.R. (Remote Event Trigger Recording)
  - Activates event recording automatically when alarm is triggered, and send alerts with images to designated e-mails / FTP address
  - Customizable security settings are achieved with the advanced motion detection, the scheduled motion detection recording (with 4 individually adjustable parameters), and the quick search function
  - Supports pre-alarm recording (8MB)
- Huge Storage Capacity (Up to 1.5TB storage capacity)
  - Up to 3 HDDs or 2 HDDs + independent disk array (16CH & 8CH only).
- Excellent CIF Image Quality and Performance
  - The CIF image quality is highly improved for more clear and detailed image
- Multiplex operation
  - Allows live display, record, playback, backup, and network operations at the same time
- Backup function
  - Supports DVD writer (optional), USB 2.0 flash drive and network backup
- Remote surveillance
  - Supports remote surveillance up to 5 users simultaneously via the licensed software AP & IE web browser
- Free upgrade to advanced functions
  - Allows you to upgrade DVR functions without any charges
- Covert recording
  - Blank screen replaces live displays to achieve covert recording
- A/V support
  - 16CH & 8CH: Supports 4 audio-in, 2 audio-out to record sounds / 4CH: Supports 1 audio-in, 1 audio-out to record sounds
  - Supports VGA output to monitor (optional)
- General
  - Supports IR remote control, PTZ camera operations through RS-485, and PTZ Hot Point function
  - Supports system auto recovery after power reconnected and auto video system detection (NTSC / PAL)
  - Ensures the authentication of recorded images with watermark function
  - Supports TCP/IP, PPPOE, DHCP and DDNS network connection

1.3 Specifications

MODEL	16CH	8CH	4CH
Video System	NTSC / PAL (auto detection)		
Video Compression Format	MPEG4		
Video Input (Composite video signal 1 Vp-p 75Ω BNC)	16 Channels	8 Channels	4 Channels
Video Loop Output (Composite video signal 1 Vp-p 75Ω BNC)	16 Channels	8 Channels	4 Channels
Video Output	Main Monitor Output: Composite video signal 1 Vp-p 75Ω BNC Call Monitor Output: Composite video signal 1 Vp-p 75Ω BNC		
Maximum Recording Rate (Frame)	720×480 pixels with 120 IPS <NTSC> / 720×576 pixels with 100 IPS <PAL>	720×480 pixels with 60 IPS <NTSC> / 720×576 pixels with 50 IPS <PAL>	720×480 pixels with 30 IPS <NTSC> / 720×576 pixels with 25 IPS <PAL>
Maximum Recording Rate (Field)	720×240 pixels with 240 IPS <NTSC> / 720×288 pixels with 200 IPS <PAL>	720×240 pixels with 120 IPS <NTSC> / 720×288 pixels with 100 IPS <PAL>	720×240 pixels with 60 IPS <NTSC> / 720×288 pixels with 50 IPS <PAL>
Maximum Recording Rate (CIF)	352×240 pixels with 480 IPS <NTSC> / 352×288 pixels with 400 IPS <PAL>	352×240 pixels with 240 IPS <NTSC> / 352×288 pixels with 200 IPS <PAL>	352×240 pixels with 120 IPS <NTSC> / 352×288 pixels with 100 IPS <PAL>
Adjustable Recording Speed (Frame)	120, 60, 30, 15 IPS <NTSC> / 100, 50, 25, 12 IPS <PAL>	60, 30, 15, 7 IPS <NTSC> / 50, 25, 12, 6 IPS <PAL>	30, 15, 7, 3 IPS <NTSC> / 25, 12, 6, 3 IPS <PAL>
Adjustable Recording Speed (Field)	240, 120, 60, 30 IPS <NTSC> / 200, 100, 50, 25 IPS <PAL>	120, 60, 30, 15 IPS <NTSC> / 100, 50, 25, 12 IPS <PAL>	60, 30, 15, 7 IPS <NTSC> / 50, 25, 12, 6 IPS <PAL>
Adjustable Recording Speed (CIF)	480, 240, 120, 60 IPS <NTSC> / 400, 200, 100, 50 IPS <PAL>	240, 120, 60, 30 IPS <NTSC> / 200, 100, 50, 25 IPS <PAL>	120, 60, 30, 15 IPS <NTSC> / 100, 50, 25, 12 IPS <PAL>
Multilingual OSD	YES		
Image Quality Setting	Best / High / Normal / Basic		
Hard Disk Storage (HDDs and disk arrays are optional)	**Accommodate 3 HDDs*, or 2 HDDs plus independent disk array**		**Accommodate 1 HDD**
HDD Quick Cleaning	Quick clean up the “index system” of the recorded files (750GB under 2 seconds)		
Recording Mode	Manual / Timer / Motion / Alarm / Remote		
Watermark	YES		
Refresh Rate	480 IPS for NTSC / 400 IPS for PAL	240 IPS for NTSC / 200 IPS for PAL	120 IPS for NTSC / 100 IPS for PAL
Multiplex Operation	Pentaplex: live display, record, playback, backup and network		
Remote Independent Operation	**YES**		
Audio I/O	4 audio inputs, 2 audio outputs (Mono)		2 audio inputs, 1 audio output (Mono)
Motion Detection Area	16 × 12 grids per camera for all channels		
Motion Detection Sensitivity	4 adjustable variables with precise calculation for motion detection		
Pre-alarm Recording	Yes (8 MB)		
Backup Device	**1. USB 2.0 flash drive backup; 2. Network remote backup; 3. DVR writer backup (optional)**		
USB Interface	Front panel * 1		
Web Transmitting Compression Format	**MPEG4**		
Ethernet	10/100 Base-T. Support remote control and live view via Ethernet		
Remote Operation Software	**Licensed software AP, IE browser** *Operating System: Windows 2000 and Windows XP		
Network Protocol	TCP/IP / PPPOE / DHCP / DDNS		
IR Transmitter	YES		
Alarm I/O	16 inputs, 1 output	8 inputs, 1 output	4 inputs, 1 output
Picture Zoom	2X digital zoom		
Key Lock	YES		
Video Loss Detection	YES		
Camera Title	Support up to 6 letters		
Video Adjustable	Hue / Color / Contrast / Brightness		
Date Display Format	YY/MM/DD, DD/MM/YY, MM/DD/YY, and OFF		
Daylight Saving	YES		
Power Source	DC 19V		
Power Consumption	＜64 W		
Operating Temperature	10℃ ~ 40℃ (50℉~104℉)		
Dimensions (mm)	432mm (W) × 90mm (H) × 326mm (D)		375mm (W) × 61mm (H) × 281mm (D)
System Recovery	System auto recovery after power reconnected		
Optional Peripherals	Independent disk array, VGA converter, SATA converter and keyboard controller		

* The specifications are subject to change without notice.

1.4 Package Contents

- ☐ Digital video recorder (DVR)
- ☐ Adapter and power cord
- ☐ Free licensed software AP disc
- ☐ Manual & quick start
- ☐ Thermal conductive silicone rubber
- ☐ HDD bracket screws (spare parts)
- ☐ DSUB PIN connector

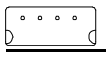
2. FRONT AND REAR PANELS

2.1 Front Panel

1) LED Indication

The following LEDs will be on when:

POWER: DVR is powered on.
STANDBY: DVR is powered off normally till the next time DVR is powered on.
HDD: HDD is reading or under recording.
HDD Full: HDD is full.
ALARM: The alarm is triggered.
TIMER: Timer recording is enabled.
PLAY: DVR is under playback status.
REC: DVR is under recording.

2)  (USB port)

To quickly backup or upgrade firmware/OSD, you can insert a compatible USB flash drive into this USB port.
Before using the USB flash drive, please use your PC to format the USB flash drive as “FAT32” first.

Note: For the list of compatible USB flash drives, please refer to “APPENDIX 2 COMPATIBLE USB FLASH DRIVE BRAND” at page 74.

---

3) EJECT

Press this button to open / close the DVR writer.

4) MENU

Press this button to enter / exit the quick start menu.
In the sub-layer of the advanced setting menu,
press this button to confirm the settings and go back to the upper layer.

5) ENTER

Confirm the password entering.
Under the advanced menu, use this button to confirm the settings and go back to the upper layer.

6) SLOW

Under the playback mode, press this button to slowly playback the recorded file (by 1/4 speed or 1/8 speed).

7) ZOOM

Press this button to enlarge the image of the selected channel.

8) ⊞

16CH: Press this button to show the 4 / 9 / 16 channel display modes.
8CH: Press this button to show the 4 / 9 channel display modes.
4CH: Press this button to show the 4 channel display mode.

9) SEQ

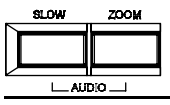
Full screen sequence (Indicated by the icon “ ”):

When the DVR is under one channel display, press “SEQ” button the DVR will enter full screen sequence mode.
Press again to exit the sequence mode.

Quad screen sequence (Indicated by the icon “ ”):

When the DVR is under quad channel display, press “SEQ” button the DVR will enter quad screen sequence

mode. Press again to exit the sequence mode.

10) 

(Audio)

Use these two buttons to select the live or playback sound of the audio channels.

Icon “ ” means: Live audio of the 1st audio channel / Icon “ ” means: Playback audio of the 1st audio channel

Icon “ ” means: Live audio of the 2nd audio channel / Icon “ ” means: Playback audio of the 2nd audio channel

Icon “ ” means: Live audio of the 3rd audio channel / Icon “ ” means: Playback audio of the 3rd audio channel

Icon “ ” means: Live audio of the 4th audio channel / Icon “ ” means: Playback audio of the 4th audio channel

Icon “ ” means: The audio channel is not selected.

Note: If you want to make a video backup with audio, please connect audio cameras to the channels which support the audio function

For 16CH & 8CH DVR, the audio channels are CH1, CH2, CH3 and CH4.

For 4CH DVR, the audio channels are CH1 and CH2.

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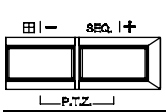
11) 

(PTZ)

Press these two buttons at the same time to enter / exit the PTZ control mode.

In the PTZ control mode (Indicated by the icon “ ”):

Zoom in: Press "＋" button ; Zoom out: Press "－" button

Adjust PTZ angle: Press "UP”, “DOWN”, “LEFT” or “RIGHT" buttons

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Note: For detailed PTZ camera control, please refer to “4.8 PTZ Camera Control” at page 19.

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12) 1 ~ 16 (for 16CH) / 1~8 (for 8CH) / 1~4 (for 4CH)

Press one of the buttons to select the channel to display.

13) LIST

To quick search the recorded files by event list, press this button to show all types of the event lists.

ALARM: List the information of the alarm-trigger-recorded files.

MANUAL: List the information of the manual-recorded files. The DVR will save one recorded file once any recording setting is changed

MOTION: List the information of the motion-trigger-recorded files.

SYSTEM: List the information of the system-recorded files. The DVR system will save one recorded file every one hour.

TIMER: List the information of the timer-recorded files.

14) SNAP

Please connect a USB drive first and then press “SNAP” button to take a snapshot picture of the current image on the monitor.

15) (PLAY)

Press this button to playback the recorded video.

16) ▌▌ (PAUSE/UP/ +), ◄◄ (REW/LEFT), ►► (FF/RIGHT), ■ (STOP/DOWN/ -)

Press one of these four buttons to move the cursor up/down/left/right.

Under the playback mode, press these buttons to pause / stop / fast rewind / fast forward the playback file.

Press ”UP/ +” or “DOWN/ -” button to change the setting in the menu.

17) POWER

Press “POWER” button long enough to turn on/off your DVR.

Note: Under the recording mode, please stop recording before turning off your DVR.

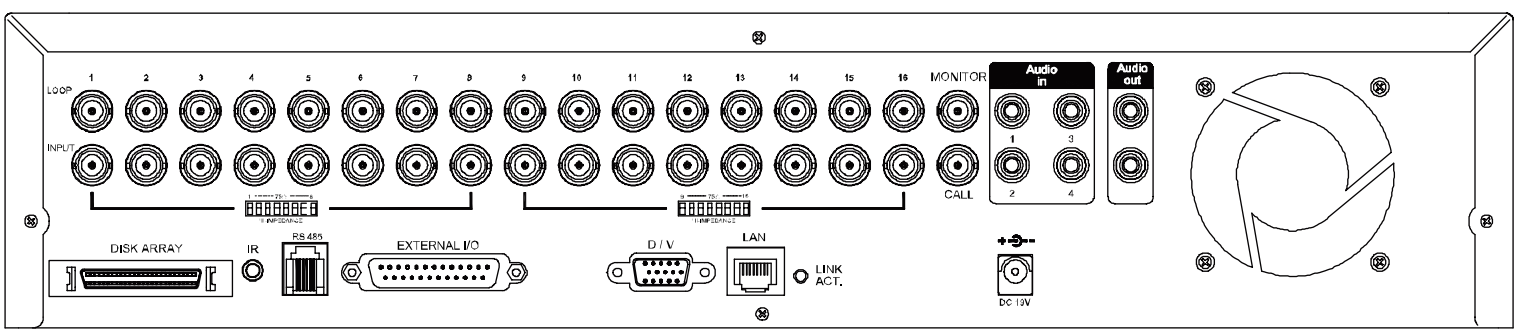
18) <u>"MENU" + "ENTER" (KEY LOCK)</u>

Press "MENU"+ "ENTER" button on the DVR front panel at the same time to lock keys.

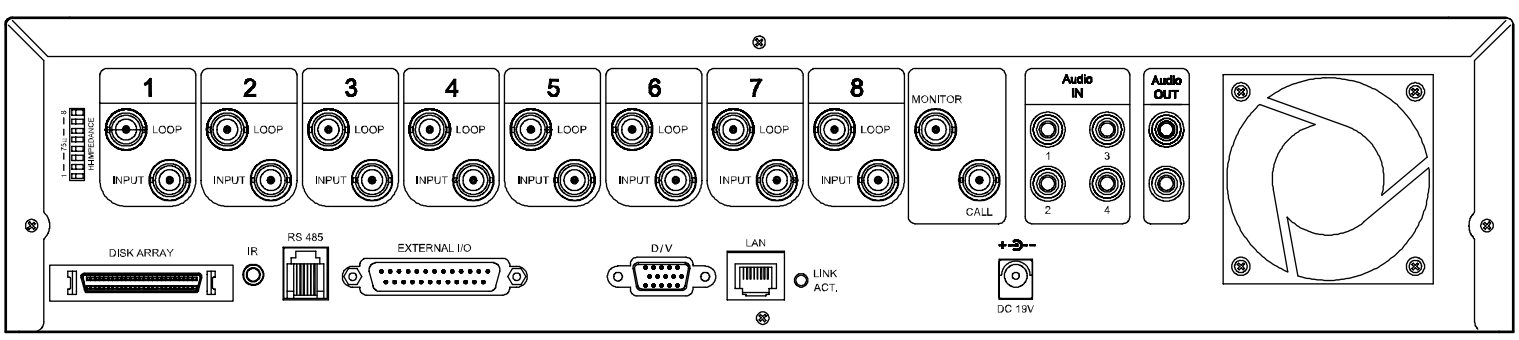
Press any button on the DVR front panel and enter the DVR password to exit the key lock mode.

2.2 Rear Panel

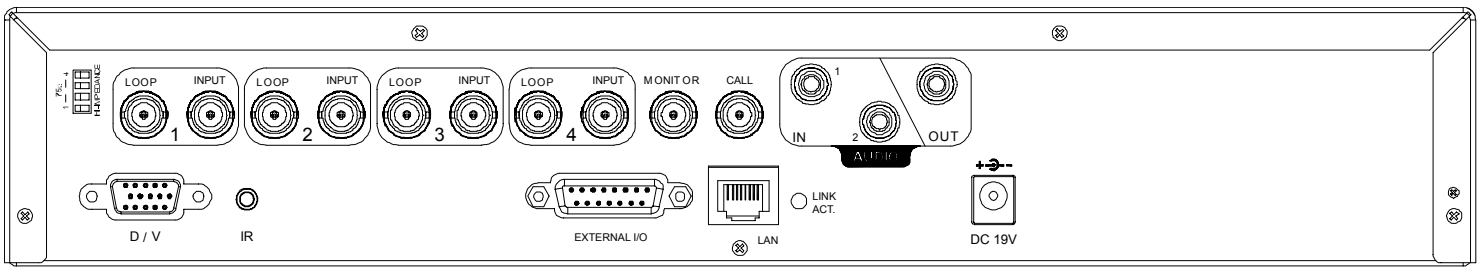
- 16CH DVR model



- 8CH DVR model



- 4CH DVR model



1) <u>75Ω / HI-IMPEDANCE</u>

When using LOOP function, set the impedance switch at your DVR rear panel to HI-IMPEDANCE to decrease interferences. Otherwise, switch to 75Ω.

Note: The default setting is **75Ω**.

2) <u>LOOP / INPUT (1 ~ 16CH or 1 ~ 8CH or 1 ~ 4CH)</u>

LOOP: Video output connector.

INPUT: Connect to video sources, such as cameras.

Note: The DVR will automatically detect the video system of the camera, please make sure that the cameras are properly connected to the DVR and power-supplied before the DVR is turned on.

Note: If you want to make a video backup with audio, please connect audio cameras to the channels which support the audio function.
For 16CH & 8CH DVR, the audio channels are CH1, CH2, CH3 and CH4.
For 4CH DVR, the audio channels are CH1 and CH2.

3) MONITOR

Connect to a CRT monitor for video output.

4) CALL

Connect to CALL monitor to show the channel display one by one.
When any alarm is triggered, CALL monitor will show the image of the triggered channel for a period of time.

5) Audio IN

Connect to audio sources, such as cameras equipped with the audio function.

For 16CH & 8CH DVR models: Four audio inputs (CH1, CH2, CH3 and CH4).
For 4CH DVR model: Two audio inputs (CH1 and CH2).

When users start recording, the audio input will also be recorded with corresponding video channel.

Note: The audio source connected to the "Audio 1" will be recorded with the video of the "CH1".
The audio source connected to the "Audio 2" will be recorded with the video of the "CH2".
The audio source connected to the "Audio 3" will be recorded with the video of the "CH3".
The audio source connected to the "Audio 4" will be recorded with the video of the "CH4".

---

6) Audio OUT

Connect to a monitor or speaker.
For 16CH & 8CH DVR models: Two audio outputs (Mono).
For 4CH DVR model: One audio output (Mono).

7) DISK ARRAY (Only for 16CH & 8CH)

Connect to an independent disk array for extended storage.

8) D/V

Connect to a VGA converter.

Note: For the connection of the VGA converter, do not use gender changer.

---

9) IR

Connect the IR receiver extension line for remote control.

10) RS-485 (Only for 16CH & 8CH)

Connect to external devices (such as PTZ camera) with RS485-A and RS485-B.

11) EXTERNAL I/O

Insert the supplied DSUB PIN to this port for connecting external devices (external alarm, PTZ camera, etc).

For detailed I/O port PIN configuration, please refer to "APPENDIX 1 PIN CONFIGURATION" at page 71.

12) LAN

Connect to Internet by LAN cable.

13) LINK ACT.

When your DVR is connected to the Internet, this LED will be on.

14) DC 19V

Connect to the supplied adapter.

15) FAN

Only 16CH and 8CH DVR have the fan equipment.

3. CONNECTIONS AND SETUP (Take 16CH DVR as an example)

3.1 HDD Installation

- **For 16CH & 8CH Models**

  Carefully follow the steps below to ensure correct HDD installation.

Note: The PCB side of the HDD must face upward, shown as the picture below.

Step 1: Loosen the screws on the upper cover and open the upper cover of the DVR

Step 2: Screw out the HDD bracket.

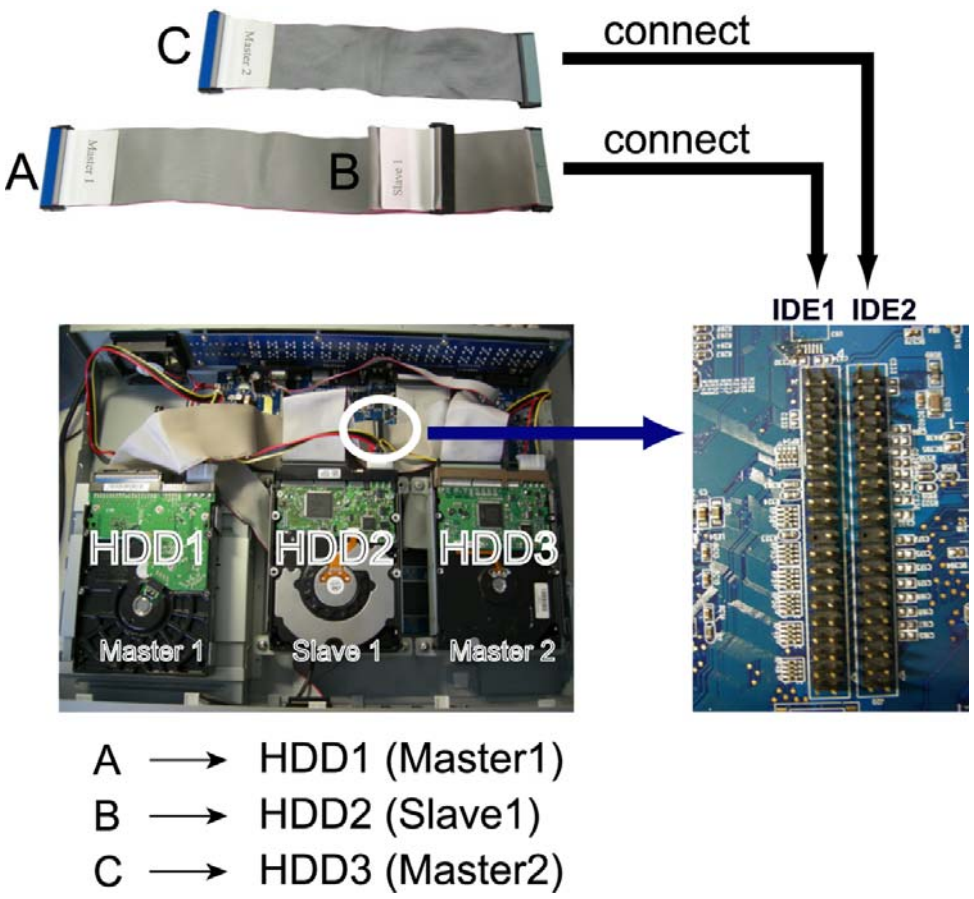
Step 3: Get suitable brand HDD and set the HDD mode (Master / Slave) according to the indication.

Step 4: After HDD mode setup, screw all the HDDs onto the HDD brackets, and replace the HDD brackets back to the indicated position of the DVR base (**Be sure to follow the indicated position shown as the picture below**).

Note: For HDD mode setting rule and position, please refer to the following instructions:

- ∗ If you plan to install three HDDs, please set two HDDs to Master mode, and one HDD to Slave mode, and place them to the exact position according to the indication.
- ∗ If you plan to install two HDDs, please set one HDD to Master mode and place it to the Master 1 position, and set the other HDD to Slave mode and place it to the Slave 1 position.
- ∗ If you plan to install only one HDD, please set the HDD to Master mode and place it to the Master 1 position.

Step 5: Depending on which HDD you want to install, connect the HDD to the indicated **power connector** and **IDE BUS** (make sure to align the HDD precisely for pin connection). For detailed connection, please follow and see the illustration below:



NOTE: If you plan to install external disk array, please don’t install the HDD in the “HDD3”postion.

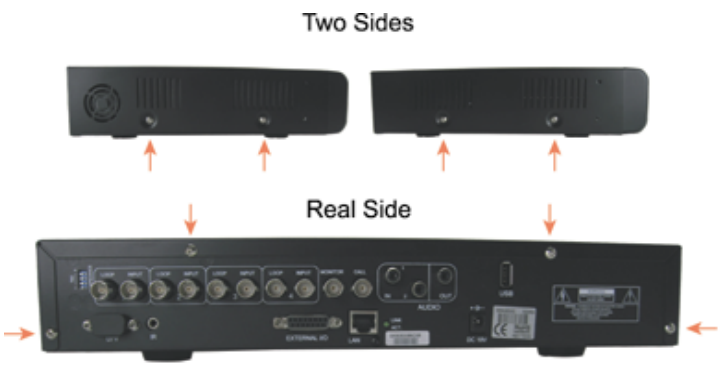
Step 6: Close the upper cover of the DVR, and fasten all the screws you loosened in Step 1.

- **For 4CH Model**

  Carefully follow the steps below to ensure correct HDD installation.

Note: The PCB side of the HDD must face upward, shown as the picture below.

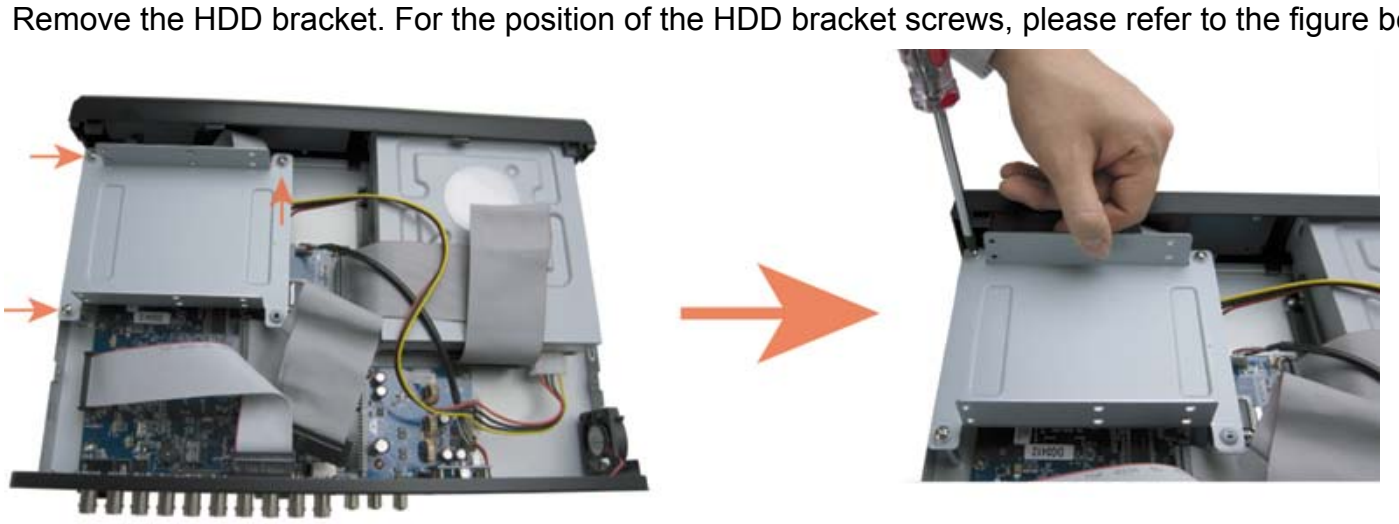
Step 1: Loosen the screws on the upper cover and open the upper cover of the DVR.



STEP1-1: Remove Screws

STEP1-2: Remove DVR Upper Cover

Step 2: Remove the HDD bracket. For the position of the HDD bracket screws, please refer to the figure below.



STEP2: Remove HDD Bracket

Step 3: Get a suitable brand HDD and set the HDD mode to “Master”. Fasten the HDD to the HDD bracket, two screws for each side. There are three screw holes per side on the bracket, and you can choose two of them to secure the HDD.

STEP3: Install HDD

Step 4: Screw the HDD bracket back to the DVR base.

STEP4: Replace HDD Bracket Back to DVR

Step 5: Connect the HDD to the power connector and IDE BUS (make sure to align the HDD precisely for pin connection). Then, close the upper cover of the DVR and fasten all the screws you loosened in the step 1.

STEP5: Replace DVR Cover Back to DVR

3.2 Camera Connection

The cameras must be connected and power-supplied before the DVR is turned on. Connect the camera with the indicated power supply. And then connect the camera video output to the DVR video input port with a coaxial cable or RCA lines with BNC connectors (**The DVR will automatically detect the video system of the camera**).

3.2.1 Normal Camera Connection

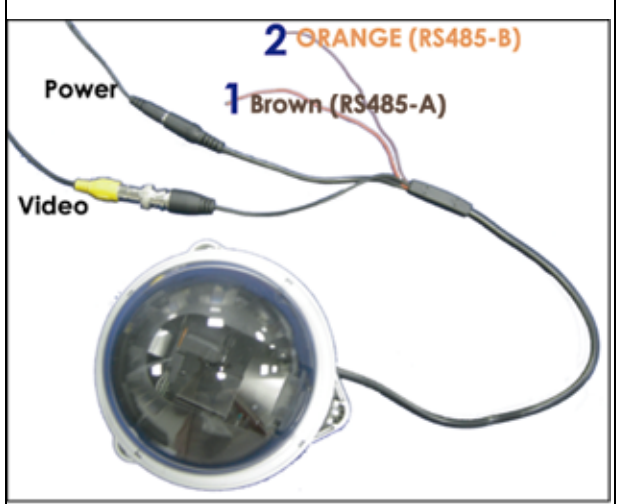
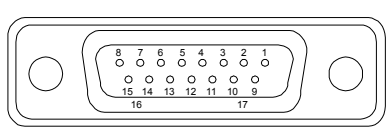
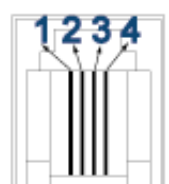
1) Power connection:
   Connect the camera with indicated power supply.
2) Video cable connection:
   Connect the camera video output to the DVR video input port with a coaxial cable or RCA line with BNC connector.
3) Camera Setup:
   For detailed camera title, ID, protocol and baud rate setup, please refer to “7.1.7 Remote” at page 33.

3.2.2 PTZ Camera Connection

4) Power connection:
   Connect the PTZ camera with indicated power supply.
5) Video cable connection:
   Connect the PTZ camera video output to the DVR video input with a coaxial cable / RCA line and BNC connector.
6) RS485-A & RS485-B wires connection:
   For 4CH DVR Model:
   Solder the RS485-A (brown) and RS485-B (orange) wires of the PTZ camera to the corresponding pins on the solder side of the 15 PIN D-Sub connector (see the figure below). To protect the naked wires, use the insulation tape to cover on the twisted wires.

7) *For 16CH & 8CH DVR Model:*

Insert the RS485-A (brown) and RS485-B (orange) wires of the PTZ camera to the corresponding pins on the "RS485" port of the DVR rear panel (see the figure below).

PTZ Camera – RS485-A and RS485-B wires of the PTZ camera	**For 4CH DVR –** 15 PIN D-Sub Connector	**For 16CH & 8CH DVR –** RS-485 Port on the DVR Rear Panel
RS485-A: **Brown wire**	RS485-A: **PIN 11**	RS485-A: **PIN 2**
RS485-B: **Orange wire**	RS485-B: **PIN 10**	RS485-B: **PIN 3**
	Solder Side of 15-pin D-Sub connector RS485-A: PIN11; RS485-B: PIN10 	 2: RS485-A 3: RS485-B

8) Camera Setup:

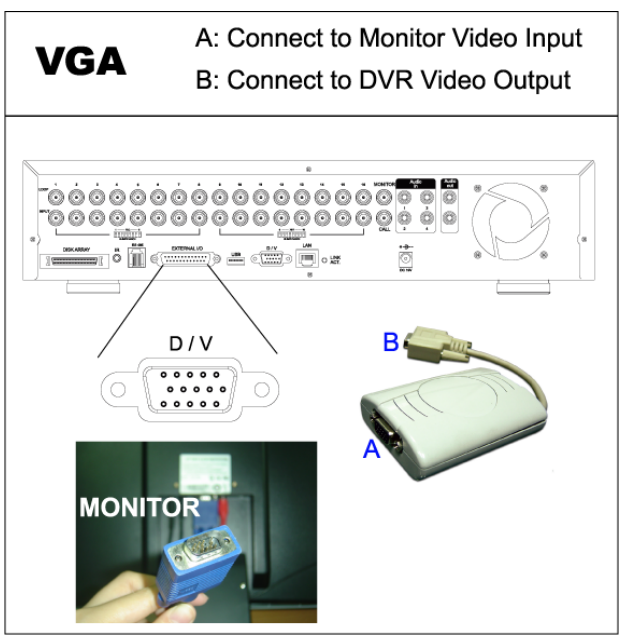
For detailed camera title, ID, protocol and baud rate setup, please refer to "7.1.7 Remote" at page 33.

Note: For connect the PTZ camera to the DVR with a keyboard controller, please refer to "3.3.3 Connect PTZ Camera and DVR with Keyboard Controller" at page 12.

3.3 External Device Connections (Optional)

3.3.1 VGA Converter Connection

This optional peripheral (VGA Converter) allows your DVR to have VGA output function. For the connection method, please refer to the following figure as an example (do not use gender changer). For detailed connection, please refer to your VGA converter manual.



3.3.2 Independent Disk Array Connection

For the connected IDA to be correctly detected by your DVR, please don't install HDD in the "HDD3" position. For connection details, please refer to "3.1 HDD Installation" at page 8.

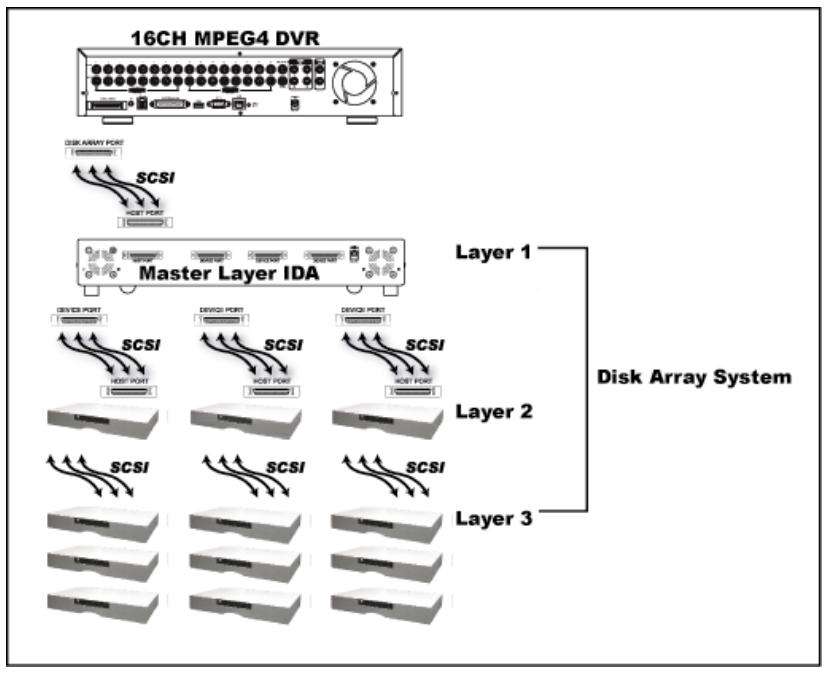
1) Install HDDs:
Install HDDs in the IDA. Please set the HDD to "Master" mode (do not use "Slave" mode). After all HDDs are installed, please lock the HDD key supplied in the IDA package.

2) Connect all IDA with SCSI cables (hub IDA only):
Connect from one of the three "DEVICE PORT" at one IDA rear panel to the host port of another disk array.
One IDA (as the master layer) can connect up to 3 IDA as the second layer, and each IDA in the second layer can respectively connect up to 3 IDA as the third layer. Please refer to the illustration below for details.

Note: In order to accurately detect all the connected disk arrays, please make sure to turn on the power of all the disk arrays after the connection is completed. The maximum layer number is 3, totally 13 IDA.

---

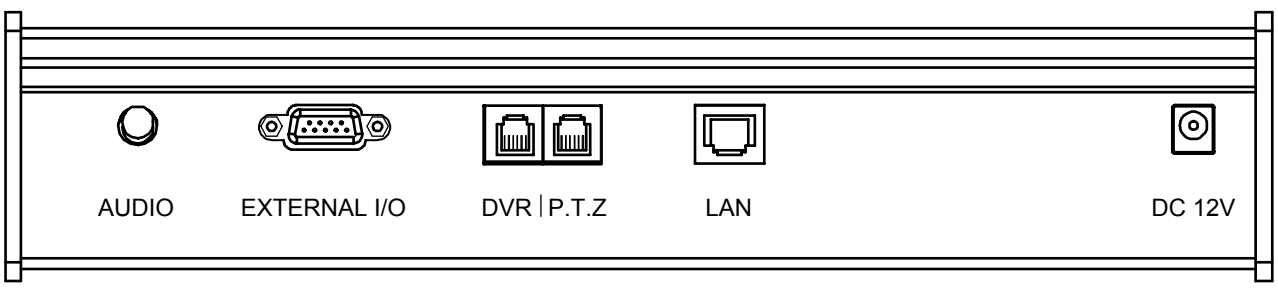
3) Connect the master IDA to your DVR with a SCSI Cable (IDE interface):
Connect the host port of the master IDA to the "DISK ARRAY" port of your DVR. Please refer to the illustration below for details.



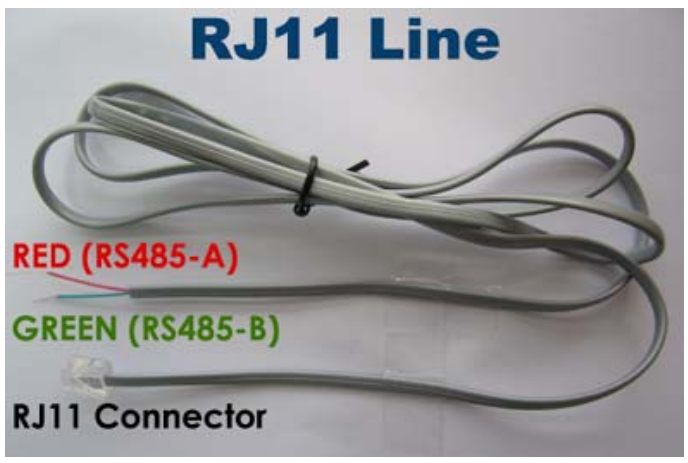
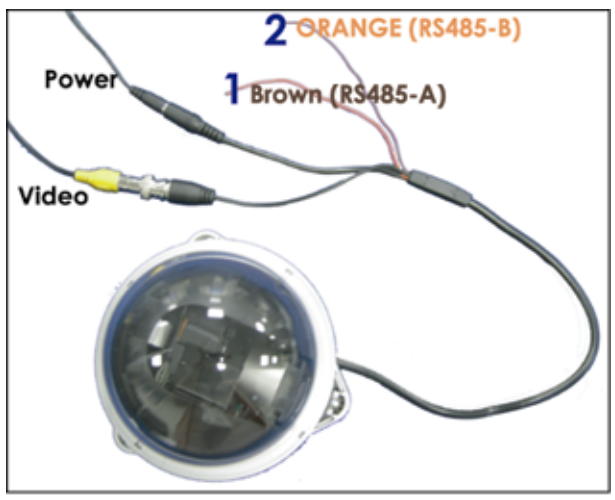
3.3.3 Connect PTZ Camera and DVR with Keyboard Controller

This optional peripheral (keyboard controller) allows your DVR to have accurate control of the pan / tilt / zoom movement for a PTZ camera with the convenient 3D joystick and functional keypad design. The following connection illustration is an example. For detailed connection and operation, please refer to your keyboard controller manual.

Rear panel of the keyboard controller:



● **Connect PTZ to Keyboard controller with RJ11 line :**

RJ11 Line	**RS485-A and RS485-B wires of the PTZ camera**
RS485-A: **Red wire**	RS485-A: **Brown wire**
RS485-B: **Green wire**	RS485-B: **Orange wire**
	
The RJ11 line is not supplied in the sales package.	*Example of RS485-A and RS485-B wires of the PTZ camera.*

1) Get a **RJ11 line** with the proper length to your connection.

Different RJ11 connector may have different line layout, so the connection might be different. If you cannot control the PTZ camera after connection, please reverse the RJ11 line connection with the PTZ camera.

2) **Remove one end of the insulating coating of the RJ11 line** to find the RS485-A and the RS485-B wires, and remove the insulating coating to reveal the naked wires for further connection.

3) **Twist the RS485-A (red) and RS485-B (green) wires of the RJ11 line to the RS485-A (brown) and RS485-B (orange) wires of the PTZ camera (see the figure above)**. To protect the naked wires, use the insulation tape to cover on the twisted wires.

4) Connect the **RJ11 connector** to the **"PTZ" port on the rear panel of the keyboard controller**.

5) Press "**F1**" key on the keyboard controller, and go to "System" and "Camera" menu to make related settings.

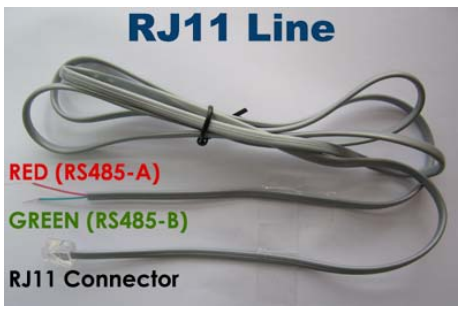
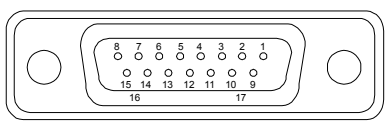
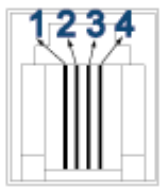
- **System**

MODE	: To select the mode, press "F1" key on the keyboard controller. Go to "System" → "MODE" and select M-1 (For the case of one DVR and one camera connection).
NET IP	: Check if this product is under the same domain as the connected PTZ camera.

- **Camera**

RATE	: Check and select the baud rate the same as the connected PTZ camera is used.
MODE	: Choose the proper camera protocol depending on the camera type, AVP321 / AVP311 / PELCO (PELCO-D).
ID	: Assign an exclusive ID number. This ID is important for the keyboard controller to identity the camera you want to control.

● **Connect DVR to Keyboard controller with RJ11 line and D-Sub connector or RS-485 Port:**

RJ11 Line	**For 4CH DVR – 15 PIN D-Sub Connector**	**For 16CH & 8CH DVR – RS-485 Port on the DVR Rear Panel**
RS485-A: **Red wire**	RS485-A: **PIN 11**	RS485-A: **PIN 2**
RS485-B: **Green wire**	RS485-B: **PIN 10**	RS485-B: **PIN 3**
	Solder Side of 15-pin D-Sub connector RS485-A: PIN11; RS485-B: PIN10 	 2: RS485-A 3: RS485-B
The RJ11 line is not supplied in the sales package.	*D-Sub connector is supplied with the DVR package.*	*Example of RS485 port on the DVR rear panel.*

1) Get a **RJ11 line** with the proper length to your connection.

Different RJ11 connector may have different line layout, so the connection might be different. If you cannot control the DVR after connection, please reverse the RJ11 line connection with the DVR.

2) **Remove one end of the insulating coating of the RJ11 line** to find the RS485-A and the RS485-B wires, and remove the insulating coating to reveal the naked wires for further connection.

3) For 4CH DVR Model:

Solder the RS485-A (red) and RS485-B (green) wires of the RJ11 line to the corresponding pins on the solder side of the 15 PIN D-Sub connector (see the figure above). To protect the naked wires, use the insulation tape to cover on the twisted wires.

For 16CH & 8CH DVR Model:

Insert the RS485-A (red) and RS485-B (green) wires of the RJ11 line to the corresponding pins on the "RS485" port of the DVR rear panel (see the figure above).

4) Insert the **D-Sub connector** to the **DVR's external I/O port.** And connect the **RJ11 connector** to the **"DVR" port on the rear panel of the keyboard controller**.

Press "**F1**" key on the keyboard controller, and go to "System" and "DVR" menu to make related settings.

- **System**

MODE	: To select the mode, press "F1" key on the keyboard controller. Go to "System" → "MODE" and select M-1 (For the case of one DVR and one camera connection).
NET IP	: Check if this product is under the same domain as the DVR.

- **DVR**

RATE	: Check and select the baud rate the same as the DVR is used.
MODE	: Choose the proper DVR protocol depending on the DVR type, DVR-16 (16CH) / DVR-8 (8CH) / DVR-4 (4CH).
ID	: Assign an exclusive ID number. This ID is important for the keyboard controller to identity the DVR you want to control.

3.3 Power Setup

This device should be operated only with the type of power source indicated on the manufacturer's label. Connect the indicated AC power cord to the power adapter, and plug into an electrical outlet. Power LED will be on as blue. It takes approximately 10 to 15 seconds to boot the system.

3.4 Date and Time Setting

Before operating your DVR, please set the date and time on your DVR first.
Press "MENU" button and enter the password to go to the quick-start menu list. The default admin password is 0000.

Move the cursor to the icon " " (DATE) and you can set the date / time / daylight saving in this menu list.

QUICK START		
	CHANNEL TITLE	ON
	EVENT STATUS	ON
	IMAGE SIZE	CIF
	QUALITY	BEST
	IMAGE PER SECOND	120
	RECORD TIMER	OFF
	DETECTION TIMER	OFF
	DATE	2007 / OCT / 11 09 : 00 : 00
	FORMAT	Y / M / D
	DAYLIGHT SAVING	OFF

ADVANCE ↑↓ SELECT ← BACK → NEXT ↵ ENTER

Note: If the time and date settings return to their default values after the DVR is rebooted, please charge the DVR for at least 24-48 straight hours. Please contact your local retailer if the situation still occurs.

3.5 Password Setting

Press "MENU" button and enter the password to go to the quick-start menu list. And then move the cursor to "ADVANCE" to enter the advanced setting menu.

In the "ADVANCE" menu, move the cursor to " " (SYSTEM INFO). Select "PASSWORD" and press "ENTER" button to enter the submenu to set the password (four digits). The default admin password is 0000.

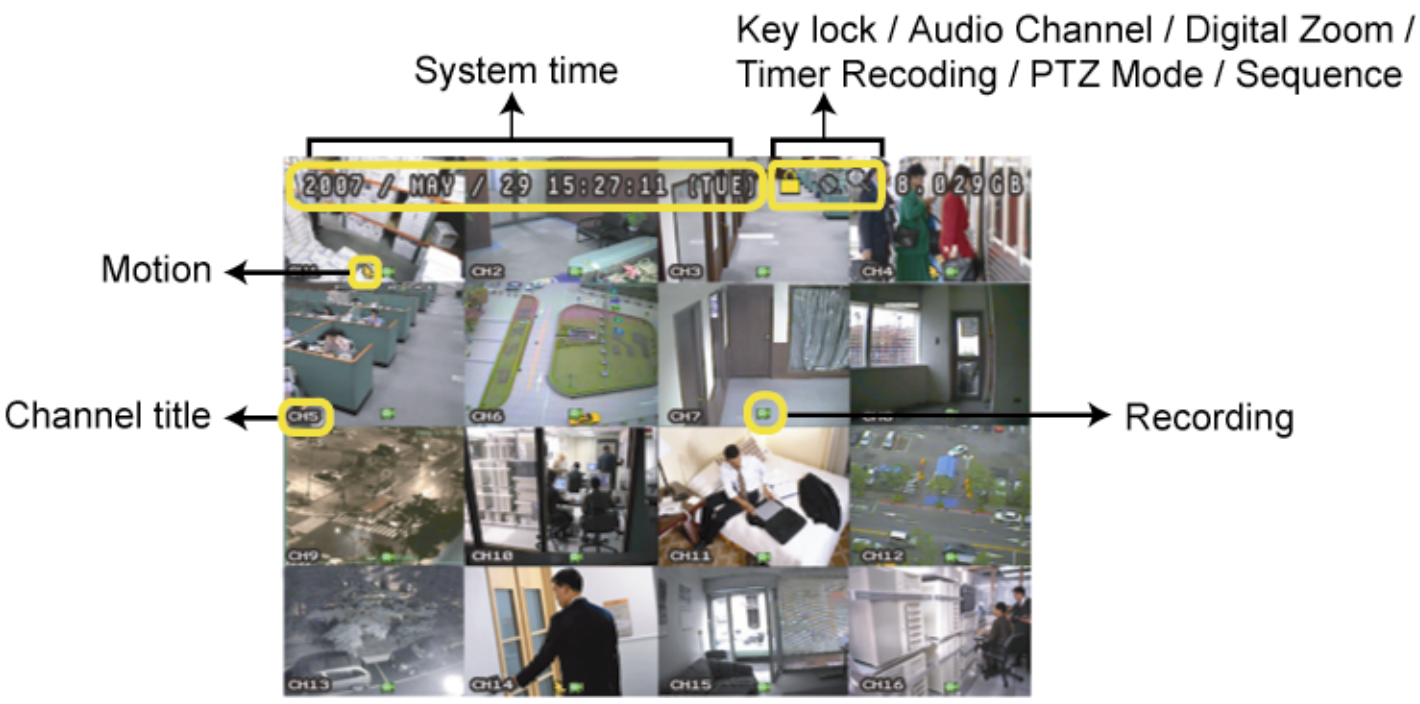
SYSTEM INFO		
	SERIAL TYPE	RS485
	BAUD RATE	2400
	HOST ID	0
	PASSWORD	XXXX
	RESET DEFAULT	RESET
	CLEAR HDD	HDD-MASTER-1
	UPGRADE	START
	AUTO KEYLOCK (SEC)	30
	LANGUAGE	ENGLISH
	VIDEO FORMAT	NTSC
	VERSION	1143-1011-1021-1013-M1-6C1B

PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
↑↓ SELECT ← BACK → NEXT ↵ ENTER

4. BASIC OPERATION (Take 16CH DVR as an example)

4.1 Live Page

In this live page of the DVR, you can see the live viewing of 1- / 4- / 9- / 16-cut screen.



Icon	Function	Icon	Function	Icon	Function	Icon	Function
	Key lock		Key unlock		1st live audio channel		2nd live audio channel
	3rd live audio channel		4th live audio channel		Audio channel unselected		Digital zoom mode
	Digital zoom unselected		Timer recording		PTZ control mode		Full screen sequence mode
	Quad screen sequence mode		Recording		Motion		Alarm

4.2 Recording

When the recording and the pre-alarm function are activated, this device will overwrite 8GB data from the oldest for continuous recording without notice.

1) Continuous Recording Icon

When the DVR is properly connected with camera and HDD is installed, you can see the icon " " (recording) on the screen.

2) Event Recording Icon

When the motion / alarm detection is activated, once motion or external alarm happens, you will see the icon " " (motion) or " " (external alarm) on the screen.

3) Timer Recording Icon

When the timer record is activated, you will see the icon " " (timer) on the screen.

Note: The audio source connected to the "Audio 1" will be recorded with the video of the "CH1".
The audio source connected to the "Audio 2" will be recorded with the video of the "CH2".
The audio source connected to the "Audio 3" will be recorded with the video of the "CH3".
The audio source connected to the "Audio 4" will be recorded with the video of the "CH4".

4.3 Playback

Press the "▷" (PLAY) button on the DVR control panel, and the device will playback the latest recorded video.

Note: There must be at least 8192 images of recorded data for playback to work properly. If not, the device will stop playback. For example, if the IPS is set to 30, the recording time should be at least 273 seconds (8192 images / 30 IPS) for the playback to work properly.

1) Fast Forward (►►) / Fast Rewind (◄◄)

You can increase the speed for fast forward and rewind on this device. In the playback mode:
Press "►►" once to get 4X speed forward and press twice to get 8X speed, etc. And the maximum speed is 32X.
Press "◄◄" once to get 4X speed rewind and press twice to get 8X speed, etc. And the maximum speed is 32X.

Note: During playback, the image size of the recording (Frame, Field or CIF) will be shown on the screen.

2) Pause (❚❚) / Image Jog

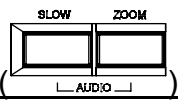
Press "❚❚" button to pause the playback.
In the Pause mode:
Press "►►" button once to get one frame forward.
Press "◄◄" button once to get one frame rewind.

3) Stop (■)

Pressing "STOP" button under playback mode, the screen of this device will return to live monitoring mode.

4) Slow Playback

Press "SLOW" button to get 1/4X speed playback and press twice to get 1/8X speed playback.

5) Audio Playback (

)

Use these two buttons to select the live or playback sound of the audio channels.

Icon " " means: Live audio of the 1st audio channel / Icon " " means: Playback audio of the 1st audio channel

Icon " " means: Live audio of the 2nd audio channel / Icon " " means: Playback audio of the 2nd audio channel

Icon " " means: Live audio of the 3rd audio channel / Icon " " means: Playback audio of the 3rd audio channel

Icon " " means: Live audio of the 4th audio channel / Icon " " means: Playback audio of the 4th audio channel

Icon " " means: The audio channel is not selected.

Note: If you want to make a video backup with audio, please connect audio cameras to the channels which support the audio function
For 16CH & 8CH DVR, the audio channels are CH1, CH2, CH3 and CH4.
For 4CH DVR, the audio channels are CH1 and CH2.

4.4 Key Lock and Unlock

1) Key Lock On:

Press "MENU"+ "ENTER" button on the DVR front panel at the same time to lock keys.

2) Auto Key Lock:

Set the time-out after which the key lock function is activated (Never / 10 SEC / 30 SEC / 60 SEC). Please refer to "7.2 System Info" at page 34.

3) Key Lock Off:

Enter the DVR password to exit "Key Lock" mode.

Note: For the password setting, please refer to "3.5 Password Setting" at page 15.

4.5 Upgrade

Note: Do not disconnect the power of your DVR while the upgrade process is in progress, or the DVR functions may not work properly or be unable to use.

- **Firmware / Multilanguage OSD Upgrade**

1) Use USB to upgrade firmware or OSD:

Step 1. Format the USB memory device as FAT32 format first.

Step 2. Get the upgrade files from your distributor and save the upgrade files in your USB flash device (do not change the file name).

Step 3. In the " " (SYSTEM INFO) menu, move the cursor to "UPGRADE", and press "ENTER" button.

Step 4. Select "YES", and press "ENTER" button again to confirm upgrade.

2) Use AP software to remotely upgrade firmware or OSD:

Step 1. Save the upgrade files at your PC (do not change the file name) and then login to the AP software.

Step 2. Press " " (Miscellaneous Control) button to show the miscellaneous control panel. In the miscellaneous control panel, press " " (Tools) button on the miscellaneous control panel to enter the AP upgrade window.

Step 3. Enter the user name, password, IP address and port number of the DVR.

Step 4. Press "Firmware" or "Language" tab as needed, and press "Add" to select the firmware or OSD files to upgrade.

Step 5. Press "Update Firmware" or "Update Language" button to start the upgrade.

Note: For remote upgrade details, please see "Tools" at page 59.

4.6 Search

1) Search by List

Press "LIST" button on the DVR control panel to show the list for all types of the recorded files. Choose the list you want to view and press "ENTER" button to start playback.

ALARM	List the information of the alarm-trigger-recorded files.
MANUAL	List the information of the manual-recorded files. The DVR will save one recorded file once any recording setting is changed
MOTION	List the information of the motion-trigger-recorded files.
SYSTEM	List the information of the system-recorded files. The DVR system will save one recorded file every one hour.
TIMER	List the information of the timer-recorded files.

2) Search by Time

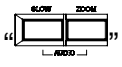
In the " " (EVENT LOG) menu list, move the cursor to "QUICK SEARCH", and press "ENTER" button to enter the quick search menu. You can search any specific events by time (Year / Month / Day / Hour / Min) and directly play the file you find.

3) Search the Record Event by Log on the AP Software

Press " " (Miscellaneous Control) button to show the miscellaneous control panel. In the miscellaneous control panel, press " " button to enter the "Status List" page. In this log view page, you can see the list of three different types of recording (User / Motion / Alarm) and press "Play" button to directly playback the file.

4.7 Audio Backup and Playback

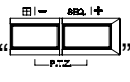
The DVR only has several channels that support audio backup. If you want to backup images with audio, please connect the cameras to the correct channels. For detailed camera connection, please refer to “3.2 Camera Connection” at page 10. For 16CH and 8CH model, the audio channels are CH1 – CH4. For 4CH model, the audio channels are CH1 – CH2. For detailed backup instruction, please refer to “7.4.2 DISK BACKUP (Optional)” at page 36.

To select live or playback sounds of the audio channels, please press these two buttons “  ” on the DVR front panel at the same time. For detailed playback instructions, please refer to “4.3 Playback” at page 17. For detailed playback instructions on the remote side, please refer to “Playback” at page 41.

4.8 PTZ Camera Control

Please connect the PTZ camera with the DVR and setup the required camera settings first. For the PTZ camera connection, please refer to “3.2.2 PTZ Camera Connection” at page 10, or refer to “3.3.3 Connect PTZ Camera and DVR with Keyboard Controller” at page 12. For the PTZ camera ID, protocol, baud rate setting (at the DVR menu), please refer to “7.1.7 Remote” at page 33.

1) PTZ control at DVR side:

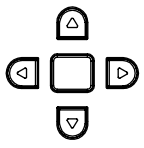
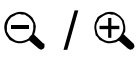
Press the two buttons “  ” on the DVR front panel at the same time to enter / exit the PTZ control mode.

In the PTZ control mode:

Zoom in: Press "＋" button ; Zoom out: Press "－" button

Adjust PTZ angle: Press "UP”, “DOWN”, “LEFT” or “RIGHT" buttons

2) PTZ control at keyboard controller side:

KEYS	Press this key to enter the PTZ camera control mode. In the control mode of the PTZ camera, the LED light of the PTZ camera icon on the controller will be on. OPERATION
	Press this key to access the main menu of the PTZ camera.
	Use the up or down key to position the cursor beside the selection / make selection.
	Press the right key, the sub-menu shows up. Press the left key, go the upper layer of the menu list.
	Use the enter key to confirm the setting / Enter the sub-menu
FUN.1	Press this key to configure the setting of the PTZ camera on the controller LCD display. In the setting menu, use the navigation keys to select and modify the setting.
SET.	This key is saved for future functions.
SEQ.	Press this key to start sequence function. Press it again to exit the sequence mode.
GOTO	Press this key to go to the preset point
－ **FOCUS** ＋	Adjust the focus of the PTZ camera.
	Press these keys to zoom out / zoom in the PTZ camera.
TRACK	Press this key to start auto-tracking function and press it again to exit.
STOP	NA
－ **/** ＋	NA
0 ~ 9	Use this number pad to enter the camera ID, channel number and password, etc.
ESC	Ignore the setting and exit.
	Confirm the setting
	Use the joystick to control the PTZ camera to move up / down / left / right. Turn the joystick clockwise to zoom in. Turn the joystick counter-clockwise to zoom out.

5. MAIN MENU

5.1 Menu Configuration

QUICK START MENU		STATUS	CHANNEL TITLE
			EVENT STATUS
		RECORD	IMAGE SIZE
			QUALITY
			IMAGE PER SECOND
		TIMER	RECORD TIMER
			DETECTION TIMER
		DATE	DATE
			FORMAT
			DAYLIGHT SAVING
ADVANCED MENU		ADVANCE CONFIG	CAMERA
			DETECTION
			ALERT
			NETWORK
			DISPLAY
			RECORD
			REMOTE
		SYSTEM CONFIG	SERIAL TYPE
			BAUD RATE
			HOST ID
			PASSWORD
			RESET DEFAULT
			CLEAR HDD
			UPGRADE
			AUTO KEYLOCK (SEC)
			LANGUAGE
			VIDEO FORMAT
			VERSION
		EVENT LOG	QUICK SEARCH
			HDD INFO
			EVENT LOG
		BACKUP	USB BACKUP
			DISK BACKUP

5.2 Menu Operation Instruction

ITEM	FUNCTION
QUICK START MENU:	**View & change the settings of the quick start menu items**
MENU	Enter / exit the quick start menu
UP, DOWN	Make the selection / Change the setting
LEFT, RIGHT	Go to the upper layer or sub-layer / Make the selection
ENTER	Confirm the password entering
▼ ADVANCED MENU:	**In the quick start menu, move the cursor to the icon "▼" and press "DOWN" button to enter the advanced setting menu.**
ENTER	Go to the sub-layer of the advanced menu
MENU	Under the sub-layer of the advanced setting menu, use this button to confirm the settings and go back to the upper layer.
→ NEXT	Move the cursor to this item and press "ENTER" button to go the next page.
← BACK	Move the cursor to this item and press "ENTER" button to go the previous page.
	Other operations in the advanced menu are the same as in the quick start menu.

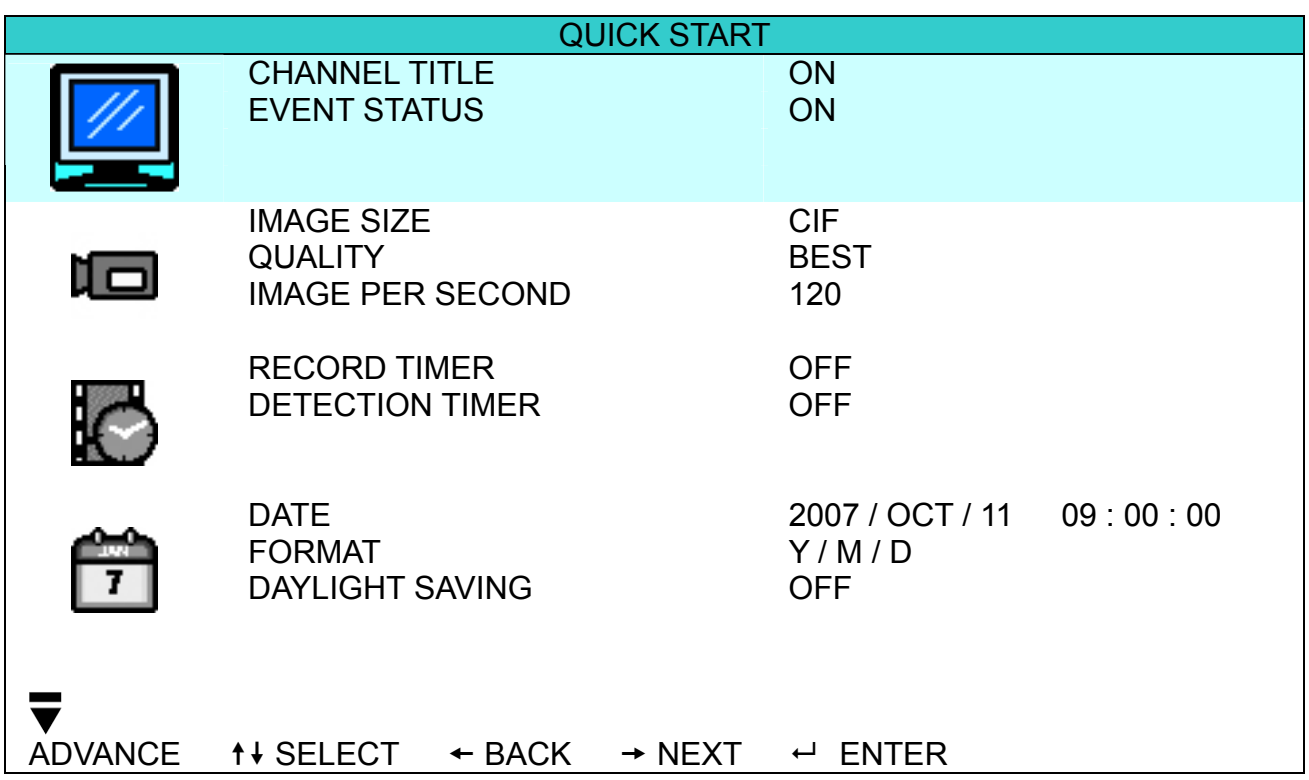
6. QUICK START MENU

Press “MENU” button and enter the password to go to the quick-start menu list. The default admin password is 0000. Users can change the password later. Please refer to “7.2 System Info” at page 34.

6.1 Status

In this menu list, you can check and change some display settings.

Move the cursor to “ ” (STATUS) icon and you will see the following screen:


QUICK START
CHANNEL TITLE ON
EVENT STATUS ON
IMAGE SIZE CIF
QUALITY BEST
IMAGE PER SECOND 120
RECORD TIMER OFF
DETECTION TIMER OFF
DATE 2007 / OCT / 11 09 : 00 : 00
FORMAT Y / M / D
DAYLIGHT SAVING OFF
ADVANCE ↑↓ SELECT ← BACK → NEXT ↵ ENTER

The submenu items are described below:

1) CHANNEL TITLE

Select to display the channel title or not (ON / OFF).

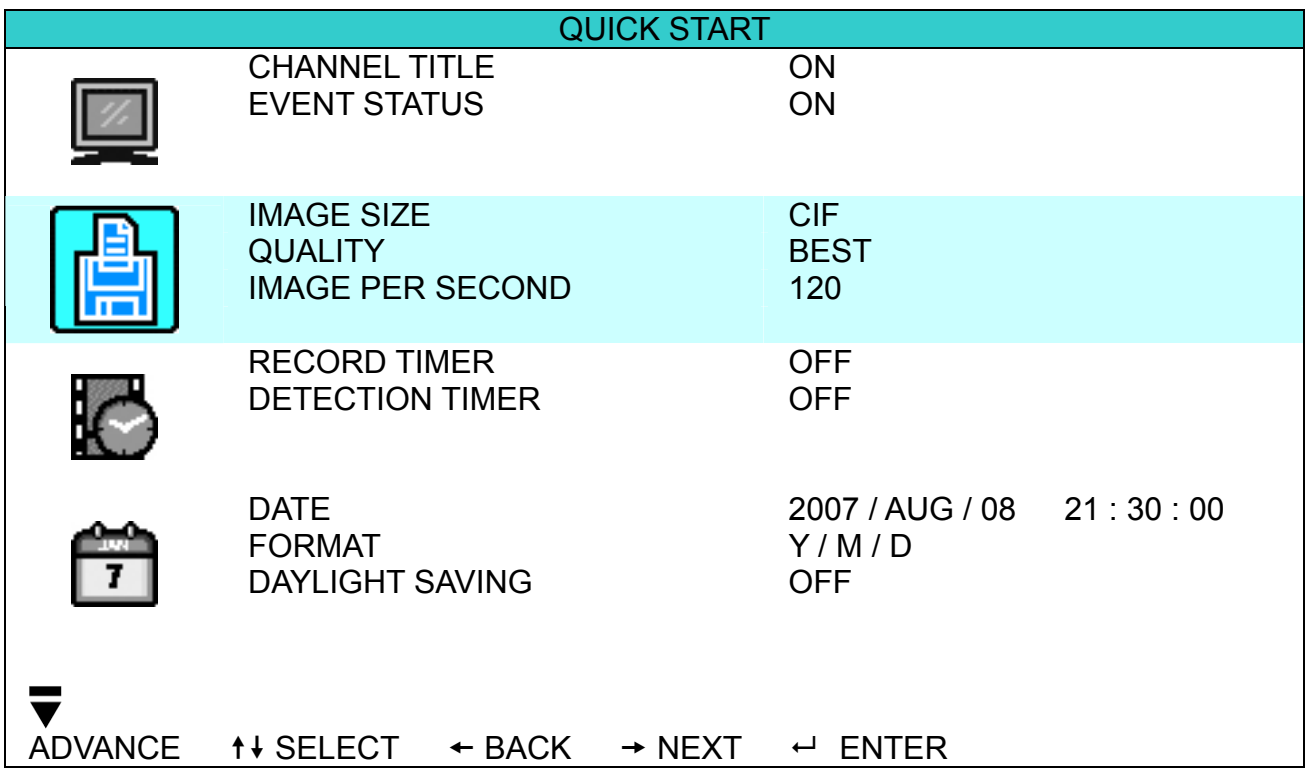
2) EVENT STATUS

Select to display the symbols of the event or not (ON / OFF).

6.2 Manual Record

In this menu list, you can set record settings.

Move the cursor to “ ” (RECORD) icon and you will see the following screen:


QUICK START
CHANNEL TITLE ON
EVENT STATUS ON
IMAGE SIZE CIF
QUALITY BEST
IMAGE PER SECOND 120
RECORD TIMER OFF
DETECTION TIMER OFF
DATE 2007 / AUG / 08 21 : 30 : 00
FORMAT Y / M / D
DAYLIGHT SAVING OFF
ADVANCE ↑↓ SELECT ← BACK → NEXT ↵ ENTER

The submenu items are described below:

1) IMAGE SIZE

Select one of the image sizes: FRAME, Field or CIF.

2) QUALITY

Select one of the 4 quality options: BEST, HIGH, NORMAL and BASIC.

3) IMAGE PER SECOND

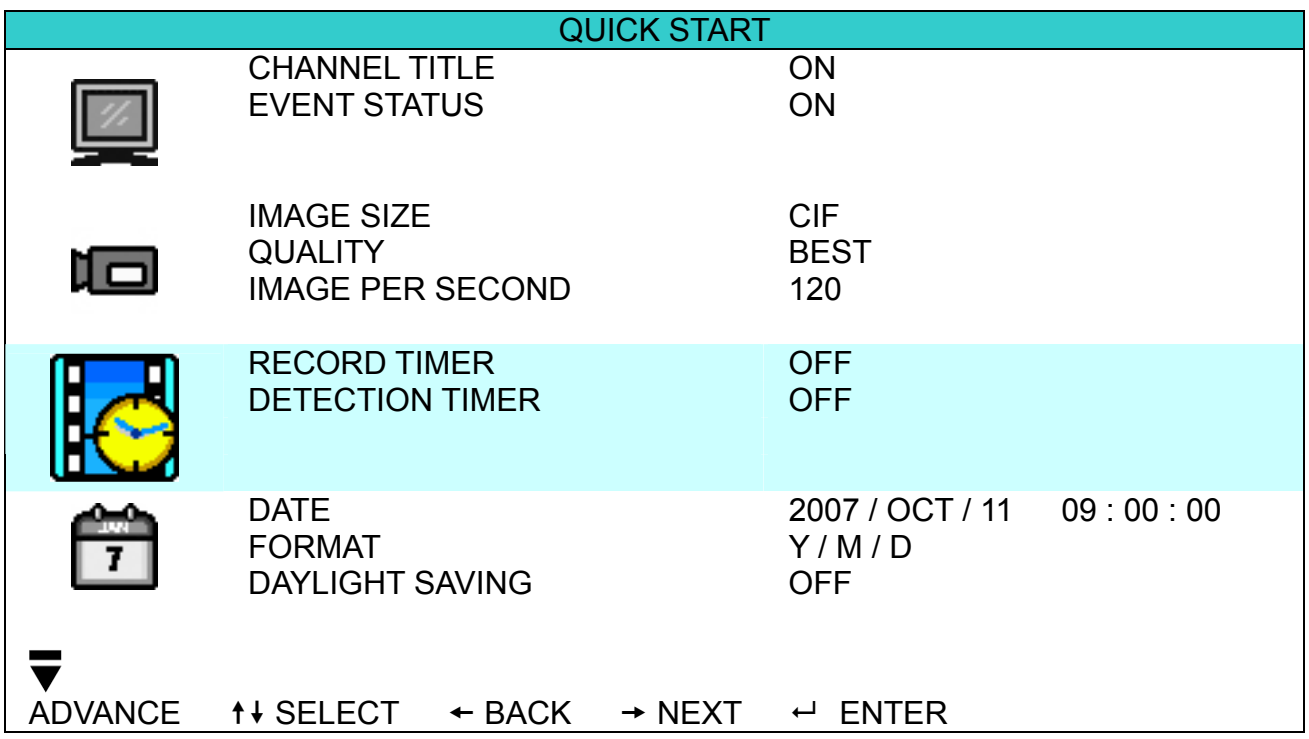
Select the images per second for MANUAL RECORD. The options are as following:

NTSC	IPS	PAL	IPS
FRAME	3, 7, 15, 30	FRAME	3, 6, 12, 25
FIELD	7, 15, 30, 60	FIELD	6, 12, 25, 50
CIF	15, 30, 60, 120	CIF	12, 25, 50, 100

6.3 Timer

In this menu list, you can schedule different sets of time for recording and detection function.

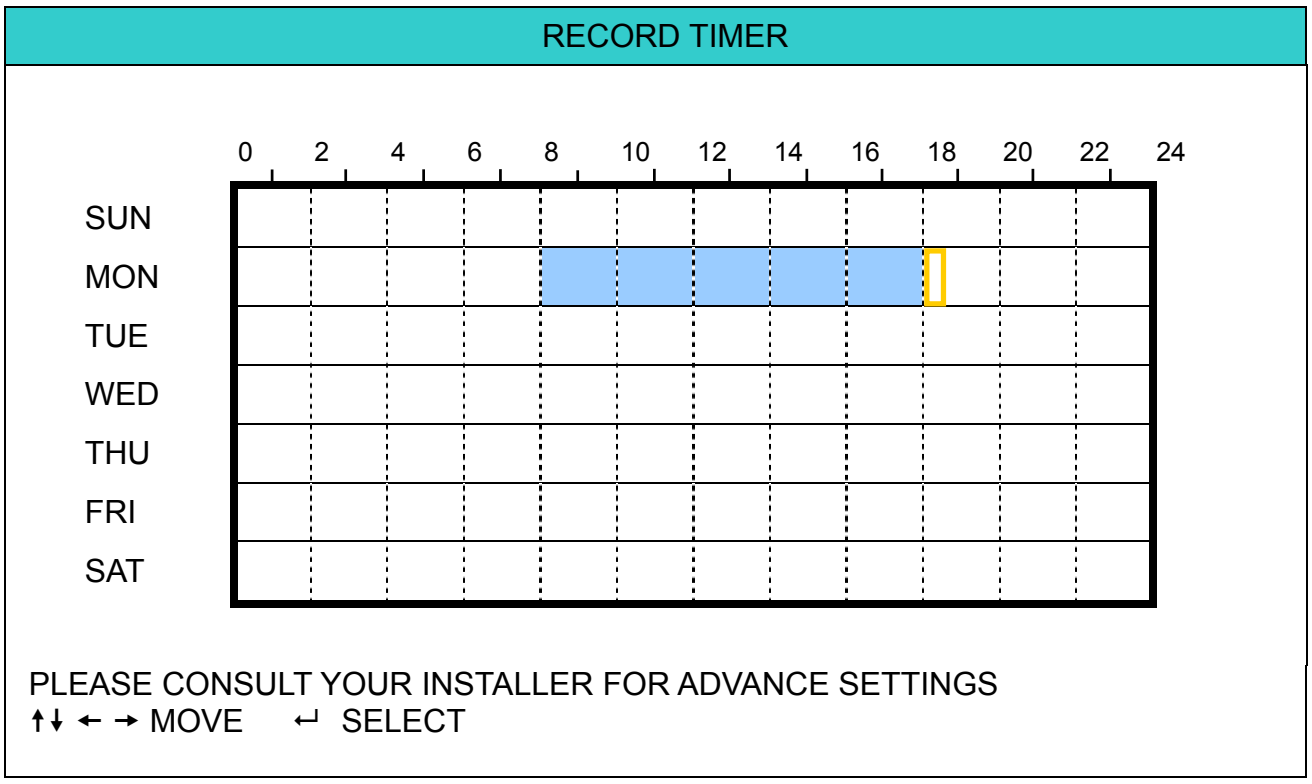
Move the cursor to “ ” (TIMER) icon and you will see the following screen:


QUICK START
CHANNEL TITLE ON
EVENT STATUS ON
IMAGE SIZE CIF
QUALITY BEST
IMAGE PER SECOND 120
RECORD TIMER OFF
DETECTION TIMER OFF
DATE 2007 / OCT / 11 09 : 00 : 00
FORMAT Y / M / D
DAYLIGHT SAVING OFF
ADVANCE ↑↓ SELECT ← BACK → NEXT ↵ ENTER

The submenu items are described below:

1) <u>RECORD TIMER</u>

Use the “UP” “DOWN” button to change the setting (ON / OFF). When it’s set to “ON”, press enter button to go to its submenu for further settings.



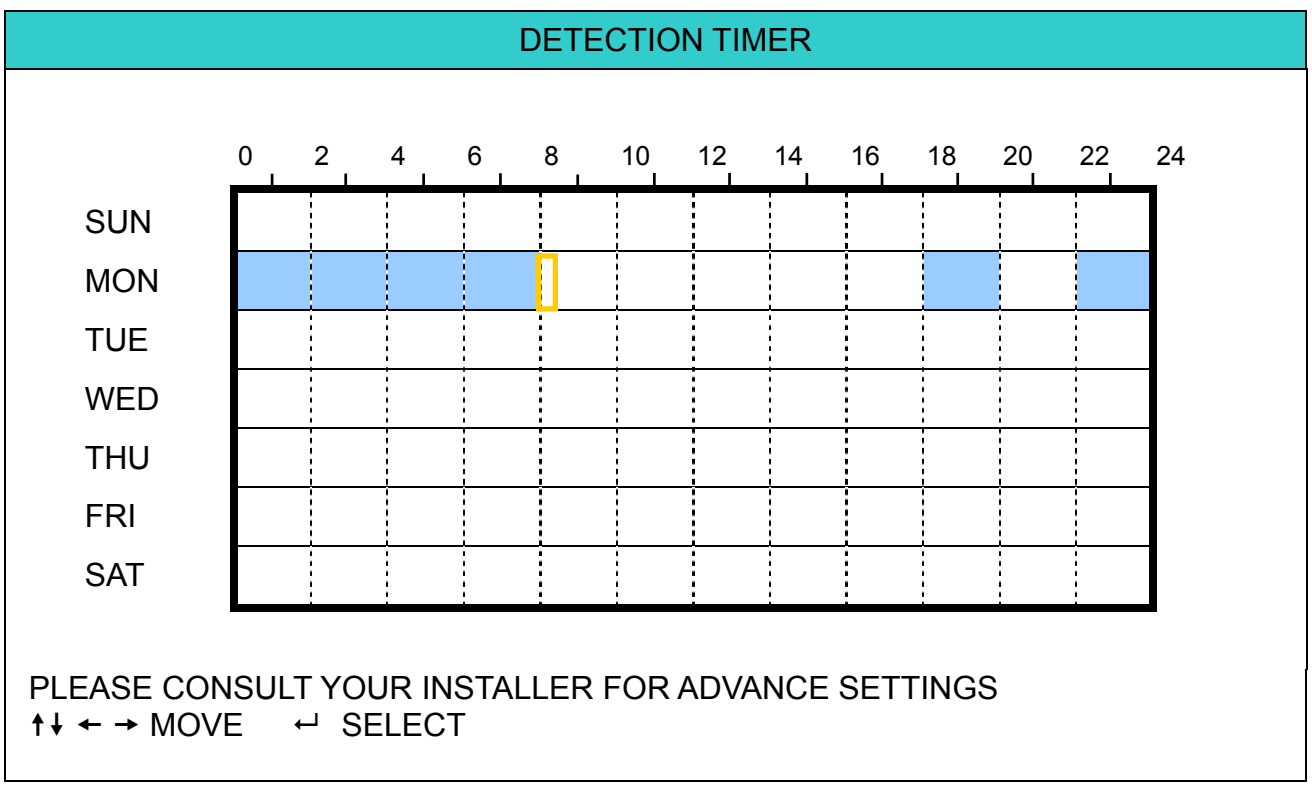
X axis: 0 ~ 24 hours. Each time interval within a square is two hours (divided into four 30-minutes).

Y axis: Monday ~ Sunday.

Operation: Move the cursor to the start time point, and press enter to set the start time point (marked in red color). Then, press “UP”, “DOWN”, “LEFT”, “RIGHT” button to set the timer-recording schedule. After setup, press enter button again to create an ending time point (marked in yellow color) and press “MENU” button to exit.

2) DETECTION TIMER

Use the “UP”, “DOWN” button to change the setting (ON / OFF). When it’s set to “ON”, press enter button to go to its submenu for further settings.



X axis: 0 ~ 24 hours. Each time interval within a square is two hours (divided into four 30-minutes).

Y axis: Monday ~ Sunday.

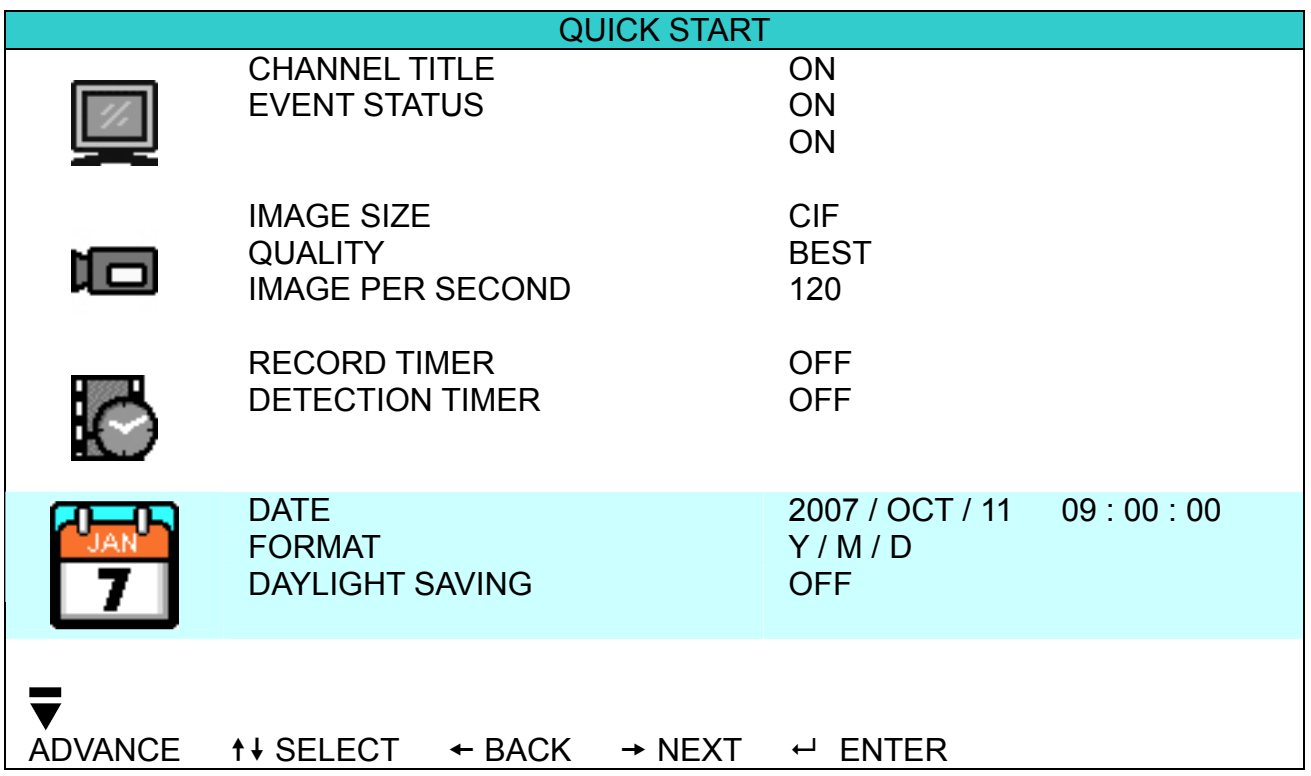
Operation: Move the cursor to the start time point, and press enter to set the start time point (marked in red color). Then, press “UP”, “DOWN”, “LEFT”, “RIGHT” button to set the timer-recording schedule. After setup, press enter button again to create an ending time point (marked in yellow color) and press “MENU” button to exit.

Note: This function here is only for detection timer setup and activation. For motion detection function setup and activation, please refer to “7.1.2 Detection” at page 27

6.4 Date

In this menu list, you can set up the system date and time for this device.

Press “MENU” button to enter the main menu list. Move the cursor to “ ” (DATE) icon and you will see the following screen:


QUICK START
CHANNEL TITLE ON
EVENT STATUS ON
ON
IMAGE SIZE CIF
QUALITY BEST
IMAGE PER SECOND 120
RECORD TIMER OFF
DETECTION TIMER OFF
DATE 2007 / OCT / 11 09 : 00 : 00
FORMAT Y / M / D
DAYLIGHT SAVING OFF
ADVANCE ↑↓ SELECT ← BACK → NEXT ↵ ENTER

The submenu items are described below:

1) DATE

Set the current date and time. The default order is “YEAR – MONTH – DATE HOUR : MIN : SEC”.

2) FORMAT

Select one date format from the following 3 options: Y-M-D / M-D-Y / D-M-Y.

3) DAYLIGHT SAVING

Use the “UP” “DOWN” button to specify whether to use daylight-saving time (ON / OFF). When it’s set to “ON”, press enter button to go to its submenu for further settings.

DAYLIGHT SAVING	
START TIME	4TH – SUN – MAR 24 : 00 : 00
END TIME	4TH – SUN – OCT 24 : 00 : 00
ADJUST	01 : 00

PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
↑↓ SELECT ← BACK → NEXT ↵ ENTER

Set the start time and end time, and adjust the daylight saving time in hour. The above example means during the daylight-saving time period (starting from the 4th Sunday of March and ending on the 4th Sunday of October), the system time will plus one hour. After setup, press enter button again to create an ending time point and press “MENU” button to exit.

Note: If the time and date settings return to their default values after the DVR is rebooted, please charge the DVR for at least 24-48 straight hours. Please contact your local retailer if the situation still occurs.

7. ADVANCED MENU (Take 16CH DVR as an example)

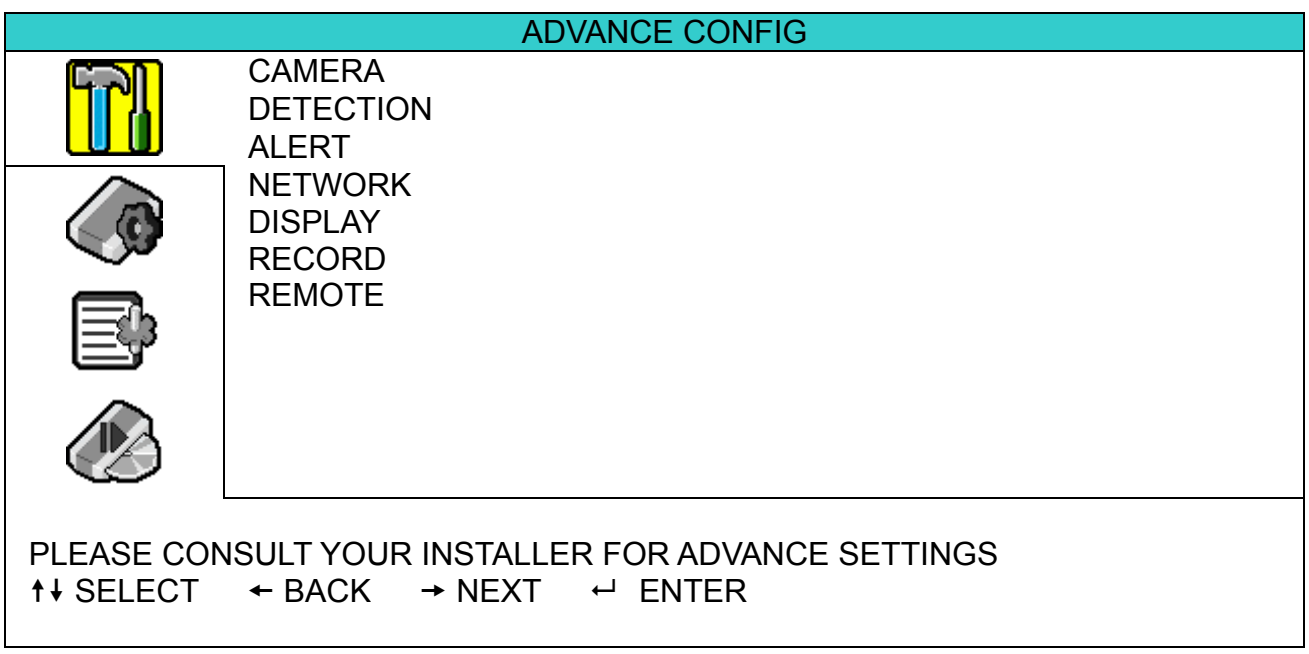
Press “MENU” button and enter the password to go to the quick-start menu list. And then move the cursor to “ADVANCE” to enter the advanced setting menu. The default admin password is 0000. Users can change the password later. Please refer to “7.2 System Info” at page 34.

It is recommended to consult your installer to set up this advanced menu.

7.1 Advanced Configuration

In this menu list, you can check or change CAMERA / DETECTION / ALERT / NETWORK / DISPLAY settings.

Move the cursor to “ ” (ADVANCE CONFIG) icon and you will see the following screen:



7.1.1 Camera

In this submenu, you can make advanced camera settings, such as changing the camera title, or adjust the brightness. Move the cursor to “CAMERA”, and press ”ENTER” button. You will see the following screen:

CAMERA

TITLE	BRIG	CONT	SATU	HUE	COV.	REC
CH1	128	098	128	128	OFF	ON
CH2	128	098	128	128	OFF	ON
CH3	128	098	128	128	OFF	ON
CH4	128	098	128	128	OFF	ON
CH5	128	098	128	128	OFF	ON
CH6	128	098	128	128	OFF	ON
CH7	128	098	128	128	OFF	ON
CH8	128	098	128	128	OFF	ON
CH9	128	098	128	128	OFF	ON
CH10	128	098	128	128	OFF	ON
CH11	128	098	128	128	OFF	ON
CH12	128	098	128	128	OFF	ON

NEXT

PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
↑↓ SELECT ← BACK → NEXT ↵ ENTER

The submenu items are described below. While you changing the camera setting, you can ***preview*** the changing on the screen.

1) TITLE

You can change the default camera naming here. The default title is the channel number.
Move the cursor to the camera title you want to change, and press “ENTER” button on the control panel of the DVR to access the character selection screen. Assign a new name to the camera up to six characters (letters or symbols or numbers).

2) BRIG / CONT / SATU / HUE

You can adjust the brightness/contrast/saturation/hue of each channel here. The default value of CONT is 098, and others are 128. The value is adjustable from 0 to 255.

3) COV

Select if you want to mask the selected channel under recording (ON / OFF). When this function is activated, the wording “COV.” Will be shown on the channel screen.

4) REC

Select if you want to enable recording for the selected channel (ON / OFF). When this function is activated, the symbol “ ” will be shown on the channel screen.

7.1.2 Detection

In this submenu, you can set up detection-related functions.
Move the cursor to “DETECTION”, and press “ENTER” button. You will see the following screen:

DETECTION

TITLE	DET	AREA	LS	SS	TS	RE	ALARM
CH1	OFF	SETUP	07	03	02	10	OFF
CH2	OFF	SETUP	07	03	02	10	OFF
CH3	OFF	SETUP	07	03	02	10	OFF
CH4	OFF	SETUP	07	03	02	10	OFF
CH5	OFF	SETUP	07	03	02	10	OFF
CH6	OFF	SETUP	07	03	02	10	OFF
CH7	OFF	SETUP	07	03	02	10	OFF
CH8	OFF	SETUP	07	03	02	10	OFF
CH9	OFF	SETUP	07	03	02	10	OFF
CH10	OFF	SETUP	07	03	02	10	OFF

NEXT

PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
↑↓ SELECT ← BACK → NEXT ↵ ENTER

The submenu items are described below:

1) TITLE

Show the camera title of each channel set in “CAMERA”.

2) DET

Select if you want to activate the motion detection function for the selected channel (ON/OFF).

3) AREA

There are 16 × 12 grids per camera for all channels. Pink blocks represent the area that is not being detected while the transparent blocks are the area under detection.
Press “ENTER” button on the control panel of the DVR to set the detection area. You will see similar screens as the following:

Transparent blocks are the area under detection.

Press “ENTER” button to confirm the start area.

Press “LEFT” / “RIGHT” button to choose the width of the detection area.

Press “UP” / “DOWN” button to choose the height of the area.

You can also set up multi-detection area.

When any movement is detected, you will see the grids are flashing.

4) LS (Level of Sensitivity)

“LS” is to set the sensitivity of comparing two different images. The smaller the value is, the higher sensitivity for motion detection. The highest sensitivity setting is 00, and the lowest sensitivity setting is 15. The default value is 07.

5) SS (Spatial Sensitivity)

“SS” is to set the sensitivity for detecting the size of one object (the number of the grids) on the screen. The smaller the value is, the higher sensitivity for motion detection.

The highest sensitivity setting is 00, and the lowest sensitivity setting is 15. The default setting is 03.

Note: The default setting of SS is 03, which means once an object is detected more than 3 grids, the system will get triggered. So the value of SS must be less than the number of grids that you set up for the motion detection area.

6) TS (Time of Sensitivity)

“TS” is to set the sensitivity regarding how long one object stays in the detection area and triggers the recording. The smaller the value is, the higher sensitivity for motion detection.

The highest sensitivity setting is 00, and the lowest sensitivity setting is 15. The default setting is 02.

7) RE (Reference)

“RE” is to set a reference for detection. The default value is 10, which means the DVR will compare 10 continuous images at one time according to the sensitivity of LS, SS, TS simultaneously.

The bigger the value is, the higher sensitivity for motion detection. The highest sensitivity is 61.

8) ALARM

Select N.C. / N.O. for the alarm polarity. The default alarm value is OFF.

7.1.3 Alert

In this menu list, you can set alerts for different kinds of situations, such as when HDD is full.

Move the cursor to “ALERT”, and press “ENTER” button. You will see the following screen:

ALERT	
EXT. ALERT	ON
INT. BUZZER	ON
KEY BUZZER	ON
VLOSS BUZZER	ON
MOTION BUZZER	ON
ALARM BUZZER	ON
ALARM DURATION (SEC)	05

PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
↑↓ SELECT ← BACK → NEXT ↵ ENTER

The submenu items are described below:

1) EXT. ALERT

Select to enable or disable the sound when any external alarm is triggered (ON / OFF).

2) INT. BUZZER

Select to enable or disable the sound (ON / OFF) for all the internal buzzers: KEY BUZZER, VLOSS BUZZER, MOTION BUZZER, and ALARM BUZZER.

Note: When this item is set to OFF, item 3) to item 6) will be disabled even though they are set to ON.

3) KEY BUZZER

Select to enable or disable the sound when pressing the buttons on the front panel (ON / OFF).

4) VLOSS BUZZER

Select to enable or disable the sound when video loss happened (ON / OFF).

5) MOTION BUZZER

Select to enable or disable the sound when any motion alarm is triggered (ON / OFF).

6) ALARM BUZZER

Select to enable or disable the sound when any internal alarm is triggered (ON / OFF).

7) ALARM DURATION (SEC)

Press “ENTER” or “＋” / “－” button to set the duration time of alarm recording in second (5 / 10 / 20 / 40).

7.1.4 Network

In this menu list, you can set up the network.

Move the cursor to “NETWORK”, and press “ENTER” button to enter the submenu.

You will see the following screen:

NETWORK	
NETWORK TYPE	STATIC
IP	192 . 168 . 001 . 012
GATEWAY	192 . 168 . 001 . 254
NETMASK	255 . 255 . 252 . 000
PRIMARY DNS	168 . 095 . 001 . 001
SECONDARY DNS	139 . 175 . 055 . 244
PORT	0080

PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
↑↓ SELECT ← BACK → NEXT ↵ ENTER

The submenu items are described below:

- **STATIC**

1) NETWORK TYPE

Select the network type as STATIC and set all the information needed in the DVR.

2) NETWORK INFORMATION (IP / GATEWAY / NETMASK)

Key in all the network information obtained from your ISP (Internet Service Provider).

3) DNS (PRIMARY DNS / SECONDARY DNS)

Key in the IP address of the domain name server obtained from your ISP (Internet Service Provider).

4) PORT

The valid number ranges from 1 to 9999. The default value is 80. Typically, the TCP port used by HTTP is 80. However in some cases, it is better to change this port number for added flexibility or security.

See the example below:

STATIC	
NETWORK TYPE	STATIC
IP	192 . 168 . 001 . 012
GATEWAY	192 . 168 . 001 . 254
NETMASK	255 . 255 . 252 . 000
PRIMARY DNS	168 . 095 . 001 . 001
SECONDARY DNS	139 . 175 . 055 . 244
PORT	0080

PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
↑↓ SELECT ← BACK → NEXT ↵ ENTER

- **PPPOE**

1) NETWORK TYPE

Select the network type as PPPOE.

2) USER NAME / PASSWORD

Set the “username” and “password” subscribed from your ISP supplier

3) DNS (PRIMARY DNS / SECONDARY DNS)

Key in the IP address of the domain name server obtained from your ISP (Internet Service Provider).

4) PORT

The valid number ranges from 1 to 9999. The default value is 80. Typically, the TCP port used by HTTP is 80. However in some cases, it is better to change this port number for added flexibility or security.

See the example below:

PPPOE	
NETWORK TYPE	PPPOE
USER NAME	ac123456
PASSWORD	tech123456
IP	000 . 000 . 000 . 000
GATEWAY	000 . 000 . 000 . 000
NETMASK	000 . 000 . 000 . 000
PRIMARY DNS	168 . 095 . 001 . 001
SECONDARY DNS	139 . 175 . 055 . 244
PORT	0080

PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
↑↓ SELECT ← BACK → NEXT ↵ ENTER

Note: The PPPOE function needs to have one "username" and one "password" subscribed from one ISP supplier, and a "DDNS account" to correspond the dynamic IP address to a specific "Hostname". For detailed PPPOE settings, please refer to "Network" at page 51. For detailed DDNS settings, please refer to "DDNS" at page 52.

- **DHCP**

1) NETWORK TYPE

Select the network type as DHCP.

2) DNS (PRIMARY DNS / SECONDARY DNS)

Key in the IP address of the domain name server obtained from your ISP (Internet Service Provider).

3) PORT

The valid number ranges from 1 to 9999. The default value is 80. Typically, the TCP port used by HTTP is 80. However in some cases, it is better to change this port number for added flexibility or security.

See the example below:

DHCP	
NETWORK TYPE	DHCP
IP	000 . 000 . 000 . 000
GATEWAY	000 . 000 . 000 . 000
NETMASK	000 . 000 . 000 . 000
PRIMARY DNS	168 . 095 . 001 . 001
SECONDARY DNS	139 . 175 . 055 . 244
PORT	0080

PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
↑↓ SELECT ← BACK → NEXT ↵ ENTER

Note: This DHCP function needs to be supported by a router or a cable modem network with DHCP services, and a "DDNS account" to correspond the dynamic IP address to a specific "Hostname", for this function to work properly.
For detailed DHCP settings, please refer to "Network" at page 51. For detailed DDNS settings, please refer to "DDNS" at page 52.

7.1.5 Display

In this menu list, you can set up the settings of display.

Move the cursor to "DISPLAY", and press "ENTER" button to enter the submenu. You will see the following screen:

DISPLAY	
DE-INTERLACE	ON
QUAD DWELL DURATION (SEC)	03
FULL SCREEN DWELL DURATION (SEC)	03
DWELL DURATION (SEC)	03

PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
↑↓ SELECT ← BACK → NEXT ↵ ENTER

The submenu items are described below:

1) DE-INTERLACE

Select to enable or disable the de-interlace function (ON / OFF).

Note: If you set the recording image size as "FRAME", please TURN ON de-interlace function.
If you set the recording image size as "CIF", please TURN OFF the de-interlace function.

2) QUAD DWELL DURATION (SEC)

Set the quad dwell duration time (3 / 5 / 10 / 15 seconds).

3) FULL SCREEN DWELL DURATION (SEC)

Set the full screen dwell duration time (3 / 5 / 10 / 15 seconds).

4) DWELL DURATION (SEC)

Set the duration time of each channel in second for CALL MONITOR (2 / 4 / 8 / 16).

7.1.6 Record

In this menu list, you can set up the record settings.

Move the cursor to “RECORD”, and press “ENTER” button to enter the submenu. You will see the following screen:

RECORD	
MANUAL RECORD ENABLE	ON
EVENT RECORD ENABLE	ON
TIMER RECORD ENABLE	ON
EVENT RECORD IPS	480
TIMER RECORD IPS	480
PRE-ALARM RECORD	ON
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS	
↑↓ SELECT ← BACK → NEXT ↵ ENTER	

The submenu items are described below:

1) MANUAL RECORD ENABLE

Set the manual recording function on / off.

2) EVENT RECORD ENABLE

Set the event recording function on / off.

3) TIMER RECORD ENABLE

Set the timer recording function on / off.

4) EVENT RECORD IPS

Select the images per second for EVENT RECORD (Recording that is triggered by an alarm or a motion).
The options are as following:

NTSC	IPS	PAL	IPS
FRAME	3, 7, 15, 30	FRAME	3, 6, 12, 25
FIELD	7, 15, 30, 60	FIELD	6, 12, 25, 50
CIF	15, 30, 60, 120	CIF	12, 25, 50, 100

5) TIMER RECORD IPS

Select the images per second for TIMER RECORD (Recording that is activated according to the scheduled time).
The options are as following:

NTSC	IPS	PAL	IPS
FRAME	3, 7, 15, 30	FRAME	3, 6, 12, 25
FIELD	7, 15, 30, 60	FIELD	6, 12, 25, 50
CIF	15, 30, 60, 120	CIF	12, 25, 50, 100

6) PRE-ALARM RECORD

Select to enable or disable the pre-alarm function (ON / OFF).
When pre-alarm and event recording functions are both activated, the DVR will record 8MB data before any alarm / motion is triggered.

7.1.7 Remote

In this menu list, you can set up remote devices to work properly.

Move the cursor to “REMOTE”, and press ”ENTER” button. You will see a similar screen as the following:

REMOTE				
TITLE	DEVICE	ID	PROTOCOL	RATE
01	CAMERA	000	NORMAL	02400
02	PTZ	255	P-D	02400
03	CAMERA	000	NORMAL	02400
04	CAMERA	000	NORMAL	02400
05	CAMERA	000	NORMAL	02400
06	CAMERA	000	NORMAL	02400
07	CAMERA	000	NORMAL	02400
08	CAMERA	000	NORMAL	02400
PREV	NEXT			

The submenu items are described below:

1) TITLE

Show the camera title of each channel set in “CAMERA”.

2) DEVICE

Select the device type (CAMERA / PTZ) according to the connected camera for each channel.

3) ID

Set the ID number (0 ~ 255) for a PTZ camera.

After connecting to a PTZ camera correctly, the default ID of the PTZ camera will be shown on the screen.

4) PROTOCOL

Select NORMAL (our protocol) or P-D (PELCO-D) protocol.

5) RATE

Set the baud rate of connected PTZ camera (2400 / 4800 / 9600 / 19200 / 57600).

Note: Please make sure the baud rate setting in the PTZ camera is the same as the setting here.

---

6) PREV/NEXT (Only for 16CH model)

Select “PREV” to go to the previous page, or “NEXT” to go to the next page.

Note: For detailed PTZ camera connection & setup, please refer to “3.2.2 PTZ Camera Connection” at page 10, and “4.8 PTZ Camera ” at page 19.

7.2 System Info

In this menu list, you can check or change some system settings.

Move the cursor to “ ” (SYSTEM INFO) icon, you will see a similar screen as the following:

SYSTEM INFO		
	SERIAL TYPE	RS485
	BAUD RATE	2400
	HOST ID	0
	PASSWORD	XXXX
	RESET DEFAULT	RESET
	CLEAR HDD	HDD-MASTER-1
	UPGRADE	START
	AUTO KEYLOCK (SEC)	30
	LANGUAGE	ENGLISH
	VIDEO FORMAT	NTSC
	VERSION	1067-1007-1013-1006-L8-6C1B
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS ↑↓ SELECT ← BACK → NEXT ↵ ENTER		

The submenu items are described below:

1) SERIAL TYPE

Here shows the serial type of the DVR (RS-485).

2) BAUD RATE

Set the baud rate of the DVR (2400 / 9600 / 19200 / 38400 / 57600).

3) HOST ID

Set the ID of the DVR (0 ~ 254).

4) PASSWORD

Reset the password for accessing the DVR system. You can set the 4-digit password.

5) RESET DEFAULT

Press “ENTER” button to reset all settings as default, and select “YES” to confirm or “NO” to cancel.

6) CLEAR HDD

Select the HDD you want to clear. Press “ENTER” button and select “YES” to confirm to clear HDD or “NO” to cancel.

7) UPGRADE (For upgrading firmware / OSD)

Before using the USB flash drive, please use your PC to format the USB flash drive as FAT32 format first. Then, save the upgrade file in a compatible USB flash drive, and insert it into the USB port at the front panel.

Press “ENTER” button and select “YES” to confirm upgrade or “NO” to cancel.

Note: For the list of compatible USB flash drives, please refer to “APPENDIX 2 COMPATIBLE USB FLASH DRIVE BRAND” at page 74.

Note: Do not disconnect the power of your DVR while the upgrade process is in progress, or the DVR functions may not work properly or be unable to use.

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8) AUTO KEYLOCK

Set the time-out in second after which the key lock function is activated (Never / 10 / 30 / 60).

9) LANGUAGE (Multilingual OSD)

Select the language of the OSD.

10) VIDEO FORMAT

Here shows the information of the DVR video format (NTSC / PAL).

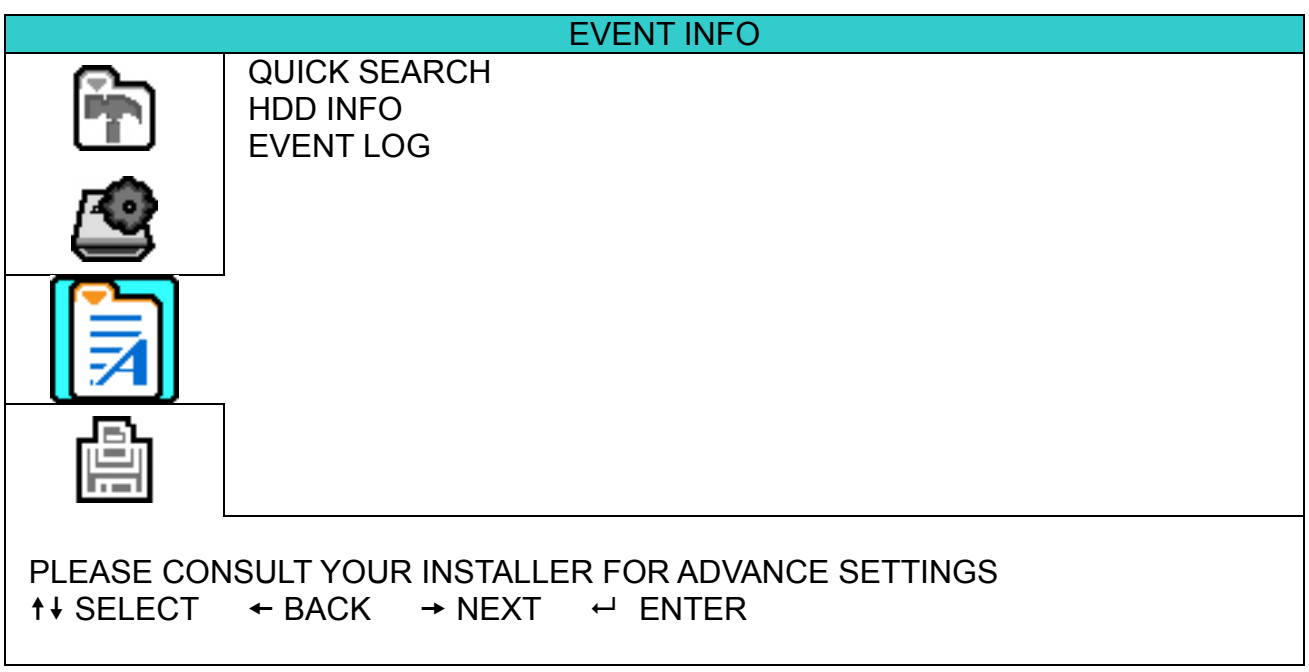
11) VERSION

Here shows the firmware version information.

7.3 Event Info

In this menu list, you can quickly search the recorded file by time and view all the HDD and event information (event type, time and channel).

Move the cursor to “ ” (EVENT INFO) icon, and press “ENTER” button. You will see the following screen:



7.3.1 Quick Search

In this menu list, you can search any specific events by time and directly play the file you find.

Move the cursor to “QUICK SEARCH”, and press “ENTER” button.

You will see a similar screen as the following:

TIME SEARCH
DATE 2007 / OCT / 10 21 : 30 : 00
SEARCH HDD ALL HDD
START
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
↑↓ SELECT ← BACK → NEXT ↵ ENTER

The submenu items are described below:

1) DATE

Select the specific time period (YEAR / MONTH / DAY / HOUR / MIN) that you want to search.

2) SEARCH HDD

Change to the HDD you want if there are more than 1 HDD in your DVR.

3) START

Move the cursor to “START” and press “ENTER” button to search and directly playback the recorded files.

7.3.2 HDD Info

In this menu list, you can view the remaining capacity of all the connected HDDs in this device.

Move the cursor to “HDD INFO”, and press “ENTER” button. You will see a similar screen as the following:

HDD INFO

HDD NUM	HDD SIZE (GB)	HDD NUM	HDD SIZE (GB)
HDD–MASTER–1	586.000	HDD–SLAVE–1	NO HDD
HDD–MASTER–2	NO HDD	HDD–SLAVE–2	NO HDD
HDD–EXT–001	NO HDD	HDD–EXT–002	NO HDD
HDD–EXT–003	NO HDD	HDD–EXT–004	NO HDD
HDD–EXT–005	NO HDD	HDD–EXT–006	NO HDD
HDD–EXT–007	NO HDD	HDD–EXT–008	NO HDD
HDD–EXT–009	NO HDD	HDD–EXT–010	NO HDD
HDD–EXT–011	NO HDD	HDD–EXT–012	NO HDD
HDD–EXT–013	NO HDD	HDD–EXT–014	NO HDD

PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
↑↓ SELECT ← BACK → NEXT ↵ ENTER

7.3.3 Event Log

In this menu list, you can view all the event information (event type, time and channel) or clear all log records. Move the cursor to “EVENT LOG”, and press “ENTER” button. You will see a similar screen as the following:

EVENT LOG

EVENT	TIME		COMMENT
POWER ON	2007 / OCT / 10	20:27:49	16
VLOSS	2007 / OCT / 10	20:05:05	06
VLOSS	2007 / OCT / 10	20:00:11	09
VLOSS	2007 / OCT / 10	16:00:08	14
VLOSS	2007 / OCT / 10	15:09:32	13
VLOSS	2007 / OCT / 10	11:00:08	12
VLOSS	2007 / OCT / 10	10:27:33	11
VLOSS	2007 / OCT / 10	08:05:55	10
RESET TO DEFAULT	2007 / OCT / 10	08:05:26	09
POWER ON	2007 / OCT / 10	08:00:22	08

PREV NEXT CLEAN

PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
↑↓ SELECT ← BACK → NEXT ↵ ENTER

Note: A new log will be added in the system log when the HDD data is overwritten or the recording starts after DVR reboots.

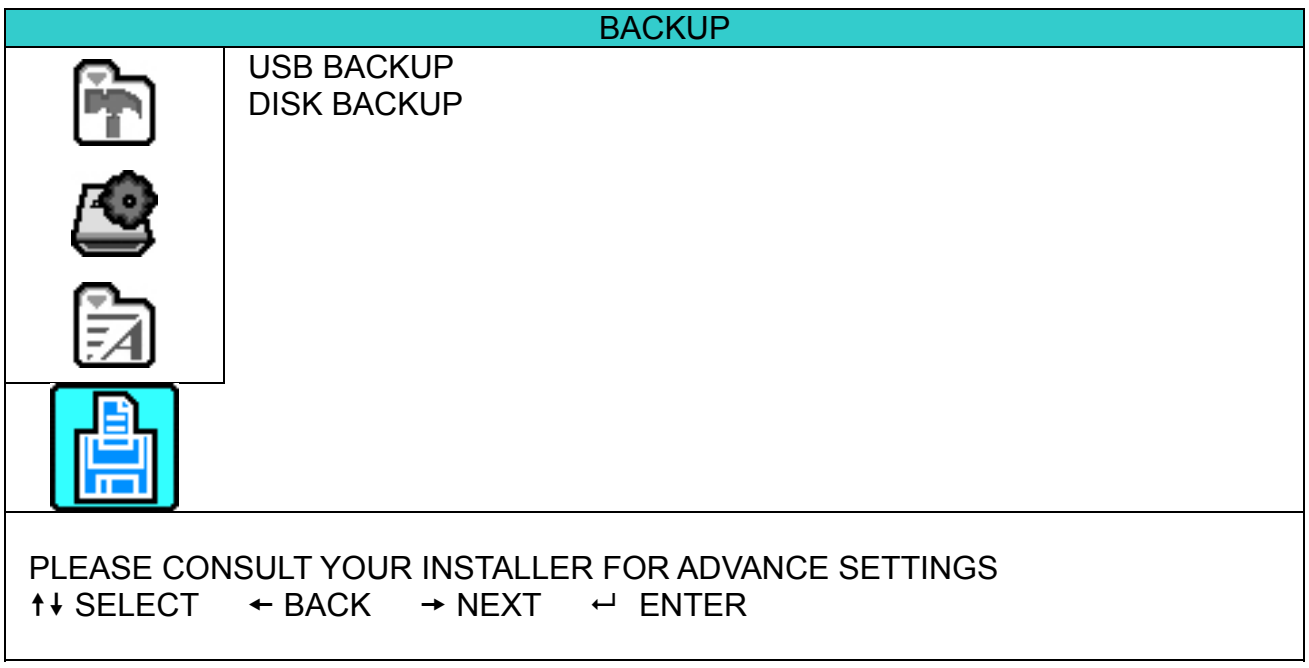
7.4 Backup

In this menu list, you can choose to make a copy for a specified period time to a compatible USB flash drive for your own purpose.

The backup file can be played directly in your PC via the supplied licensed software AP. For detailed AP playback, please refer to “Playback” at page 64.

Note: If you want to make a video backup with audio, please connect audio cameras to the channels which support the audio function
For 16CH & 8CH DVR, the audio channels are CH1, CH2, CH3 and CH4.
For 4CH DVR, the audio channel is CH1.

Move the cursor to “ ” (BACKUP), and press “ENTER” button. You will see the following screen:

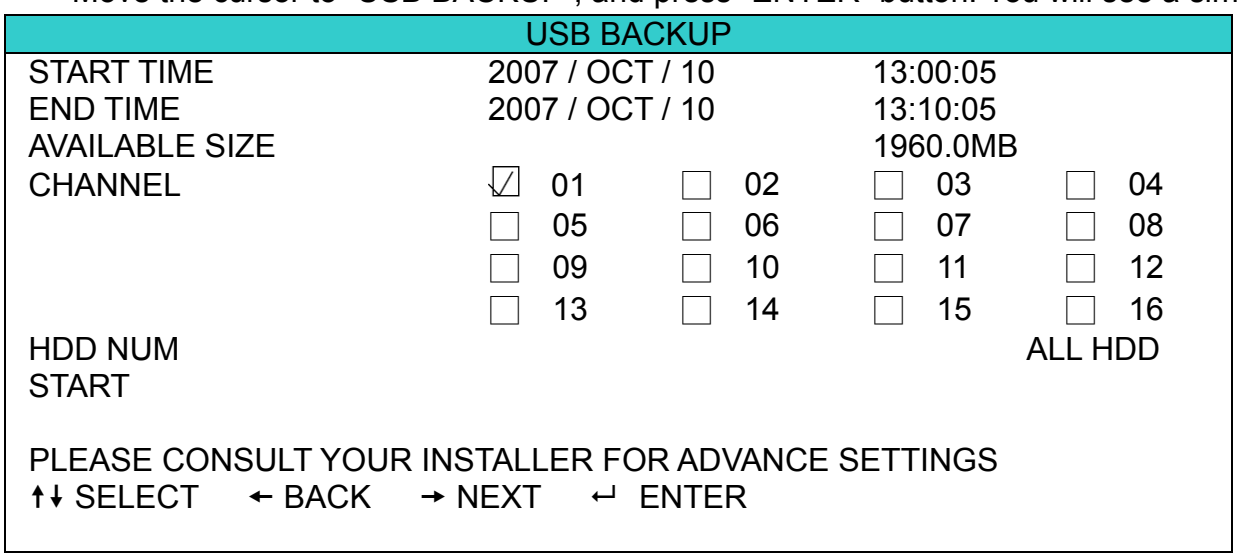


7.4.1 USB BACKUP

Before making USB backup, please check if:

a) The USB flash drive is supported by your DVR. If not, the message “USB ERROR” will be shown on the screen.
   For the list of the compatible USB flash drives, please refer to “APPENDIX 2 COMPATIBLE USB FLASH DRIVE BRAND” at page 74.
b) The format of your USB flash drive must be "FAT32". If not, please format it as “FAT32” in your PC.
c) There is no data in the USB flash drive. If yes, it’s recommended to clear all data in the USB flash drive before starting the backup.

Move the cursor to “USB BACKUP”, and press “ENTER” button. You will see a similar screen as the following:


USB BACKUP
START TIME 2007 / OCT / 10 13:00:05
END TIME 2007 / OCT / 10 13:10:05
AVAILABLE SIZE 1960.0MB
CHANNEL ☑ 01 ☐ 02 ☐ 03 ☐ 04
☐ 05 ☐ 06 ☐ 07 ☐ 08
☐ 09 ☐ 10 ☐ 11 ☐ 12
☐ 13 ☐ 14 ☐ 15 ☐ 16
HDD NUM ALL HDD
START
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
↑↓ SELECT ← BACK → NEXT ↵ ENTER

The submenu items are described as below:

1) START TIME

   Select the start time of the backup.

2) END TIME

   Select the end time of the backup.

3) AVAILABLE SIZE

   Display the available capacity in the inserted USB flash drive.

4) CHANNEL

Select channels by pressing “ENTER” button to change the symbol in front of the channel number.
Symbol “ ☑ ” means that this channel is selected to backup.
Symbol “ ☐ ” means that this channel is not selected to backup.

5) HDD NUM

Press “ENTER” button to select the HDD containing the data you need.

6) START

Press “ENTER” button to start copying the chosen data to the USB flash drive.

Note: If you want to make a video backup with audio, please connect audio cameras to the channels which support the audio function
For 16CH & 8CH DVR, the audio channels are CH1, CH2, CH3 and CH4.
For 4CH DVR, the audio channels are CH1 and CH2.

7.4.2 DISK BACKUP (Optional)

Before making disk backup, please check if the type of your DVD is DVD-R. The maximum number of backup files in the CD or DVD is 41.

Note: During the backup process, a file player will also be copied into your disk, and you will see a message “BACKUP PLAYER” shown on the screen.

Move the cursor to “DISK BACKUP”, and press “ENTER” button. You will see a similar screen as the following:

DISK BACKUP				
START TIME	2007 / OCT / 10		19:00:05	
END TIME	2007 / OCT / 10		21:00:05	
AVAILABLE SIZE			3.79 GB	
CHANNEL	☑ 01	☐ 02	☐ 03	☐ 04
	☐ 05	☐ 06	☐ 07	☐ 08
	☐ 09	☐ 10	☐ 11	☐ 12
	☐ 13	☐ 14	☐ 15	☐ 16
HDD NUM				ALL HDD
START				
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS				
↑↓ SELECT ← BACK → NEXT ↵ ENTER				

The submenu items and their functions are almost the same as USB BACKUP. For the description of the submenu items, please refer to the previous page.

The process below describes how to make a disk backup:

a) Press “EJECT” button to open the disk tray. Put the DVD into a DVR writer, and press “EJECT” button again to close the disk tray..
b) Go to “DISK BACKUP” menu, and set the start time, end time, channels and HDD.
c) Move the cursor to “START”, and press “ENTER” to start backup.
While DVD backup is processing, users will see the backup completed percentage on the screen.
d) After DVD backup is completed, “DISK BURN FINISH” will be prompted on the screen. Press “EJECT” button to eject the DVD tray and get the DVD.
e) Put the DVD into the DVD-ROM drive of your PC. Double click the file to convert it into “VSE” format. Play the converted file in your PC to see if the backup is successful.

Note: The supported PC operation systems are Windows 2000 and Windows XP**.**

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8. REMOTE OPERATION (Take 16CH DVR as an example)

You can also control the DVR remotely via the supplied licensed software AP (hereafter called the “AP”), IE web browser, and Apple’s QuickTime player.

8.1 Supplied Licensed Software AP

8.1.1 Installation & Network Connection

1) Install the software

Place the supplied CD-ROM into your DVD- / CD-ROM drive. The installation process will automatically start. Follow the on-screen instructions to install the application programs.

After installation, a shortcut icon “ ” will be shown on your PC desktop.

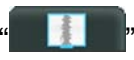
2) Network Connection

- Local Connection (via LAN)

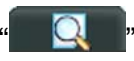
f) Connect the DVR to your PC via a RJ-45 network line. The default DVR IP address is “192.168.1.10”, and the default user name and password are both “admin”.

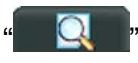
g) Set the PC’s IP address as “**192.168.1.*XXX*** ” (1~255, except 10) in order to make the PC and DVR under the same domain.

h) Double-click “” icon on your PC desktop to enter the AP control panel. By defaults, the “Address Book” ( ) panel will be displayed on the right side of the AP control panel.

i) Click “  ” (Address Book) → “ ” (Add) button to key in the default IP address, user name, password, and port number of the DVR you intend to connect.

OR

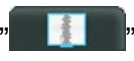
Click “  ” (Search) → “ ” (Refresh) to search the available IP address(es) of other DVR(s) under the same domain as your PC’s IP address. The found address(es) will be listed, and can be added into the address book by clicking “ ” (Add into address book).

For details, please see “  ” (Search) at page 45.

j) Double-click the IP address you just added into the address book to log in. When you’re logged in, the “Event” panel will be shown by defaults.

- Remote Connection (via Internet)

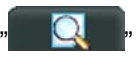
a) Double-click “ ” icon on your PC desktop to enter the AP control panel. By defaults, the “Address Book” panel will be displayed on the right side of the AP control panel.

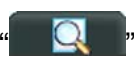
b) Click ”  ” (Address Book) → ” ” (Add) button to key in the IP address, user name, password, and port number of the DVR you intend to connect.

The default DVR values are as follows:

Item	Default Value
IP address	192.168.1.10
User name	admin
Password	admin
Port	80

OR

Click "  " (Search) → " " (Refresh) to search the available IP address(es) of other DVR(s) under the same domain as your PC's IP address. The found address(es) will be listed, and can be added into the address book by clicking " " (Add into address book).

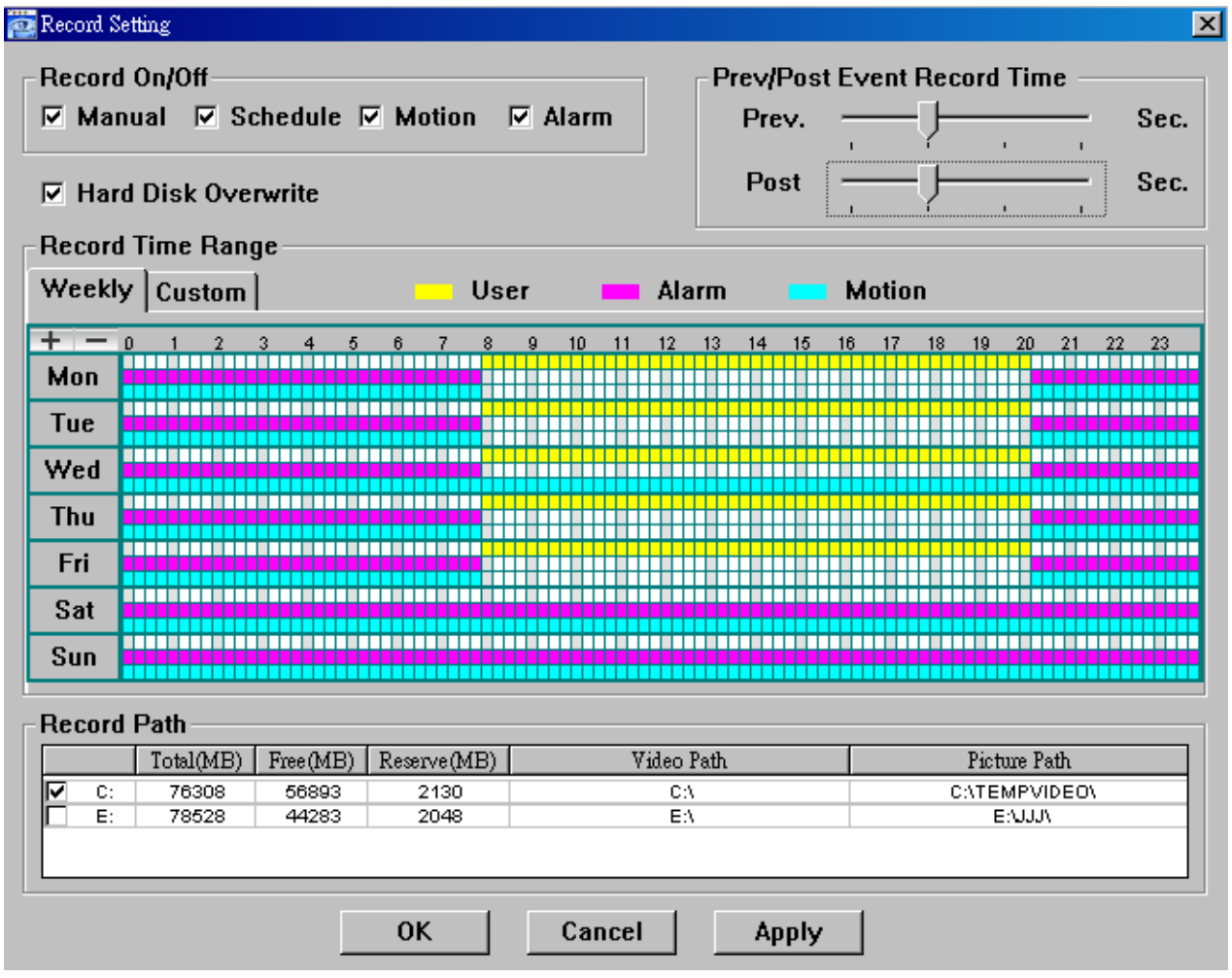
For details, please see "  " (Search) at page 45.

c) Double-click the IP address you just added into the address book to log in. When you're logged in, the "Event" panel will be shown by defaults.

8.1.2 General AP Operation

Record

To record remotely at the same time when any event alarm is triggered at the DVR side, click " " (Miscellaneous Control) → " " (Record Setting) to go to the "Record Setting" page.



In the "Record Setting" page, you can set the following items:

- Record type
- Hard disk overwriting
- Pre- / post-alarm record time
- Record time setting
- Record path

If “Manual” is checked, click “ ” (Record) on the main control panel to start the manual recording immediately, and the recordings will be saved in the specified location. The red text indication “REC” will be shown at the top left corner of the image display view.

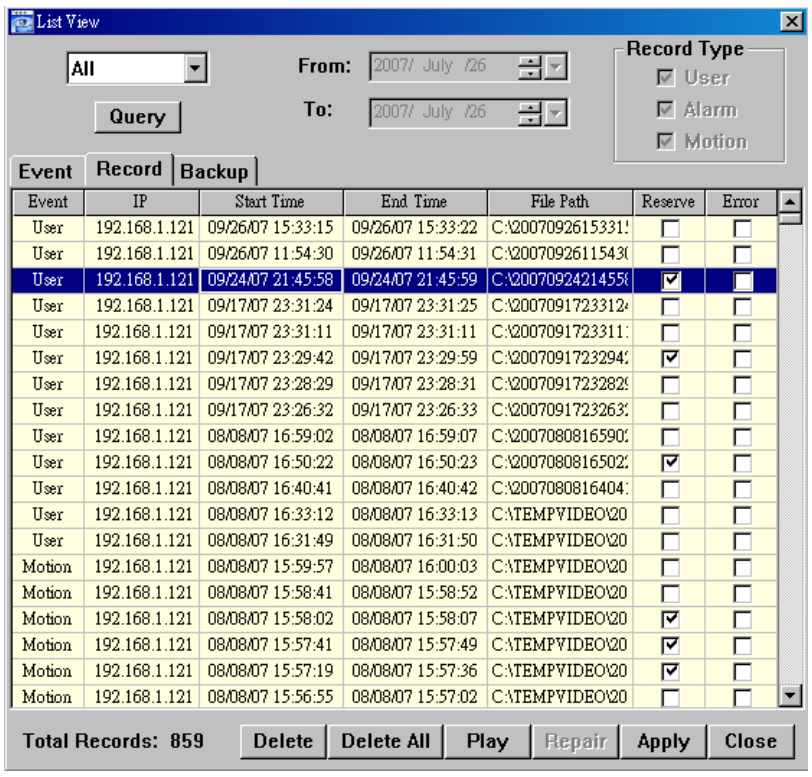
If “Motion” and / or “Alarm” are checked, the recording function will also be enabled at the remote side when any event is triggered at the DVR side, and the recordings will be saved in the specified location.

For details, please see “Record Setting” at page 47.

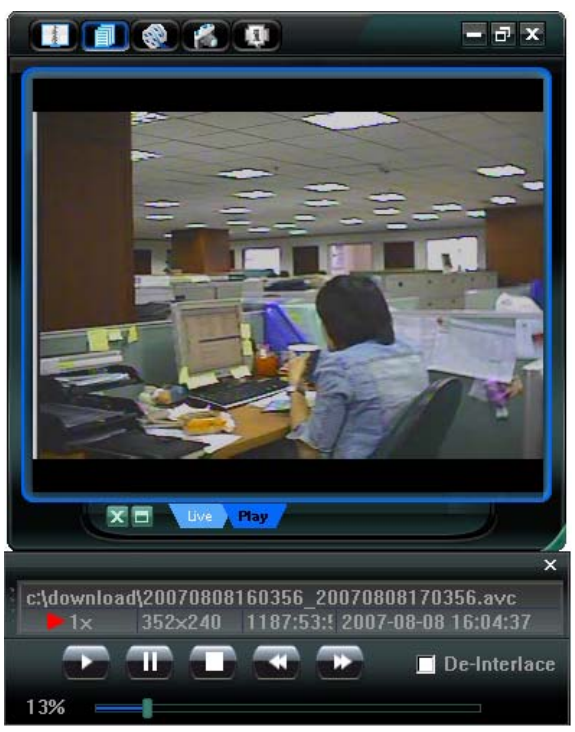
Playback

To play a recording, click “ ” (Miscellaneous Control) → “ ” (Status List), and select the “Record” tab or “Backup” tab. A list of all the recordings will be shown by defaults, and you can also sort out the logs you want to speed up the search time.

For details, please see “Status List” at page 62.



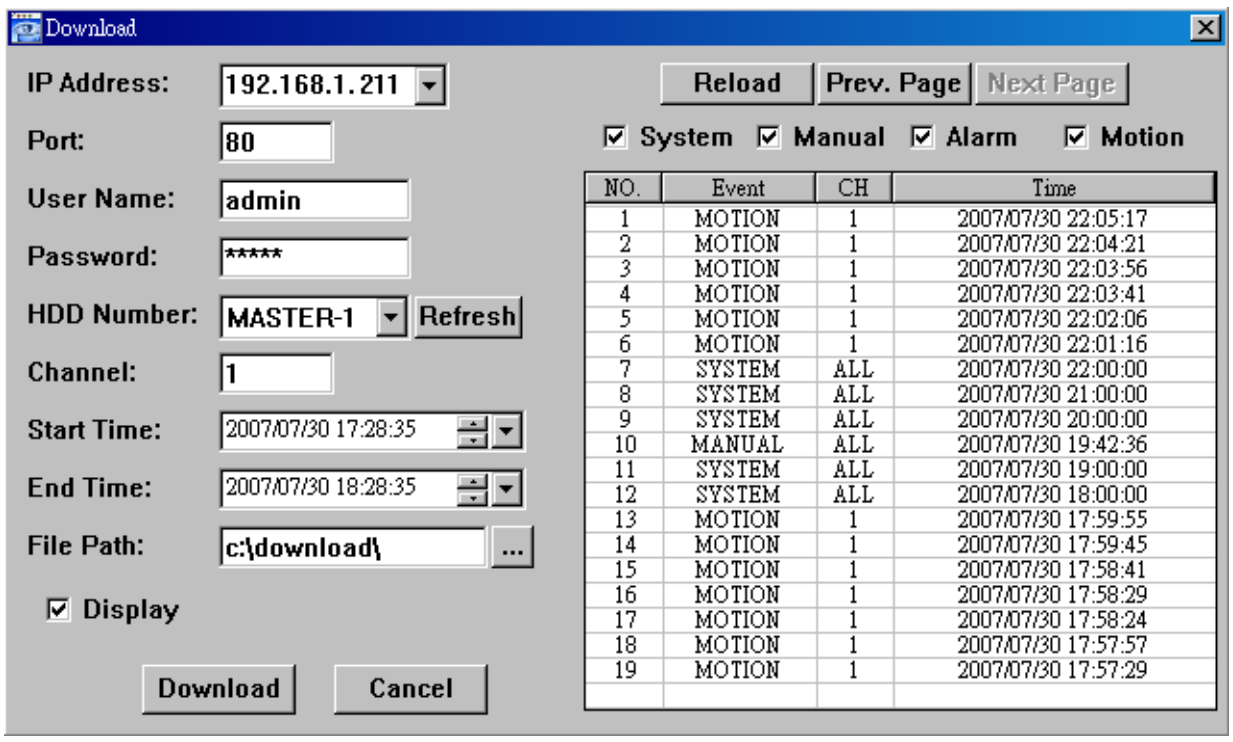
To immediately play a recording, select a log from the list, and click “Play” button, or double-click the selected log. Then, the playback control panel will be shown at the bottom of the main control panel similar to the following.



For the playback control panel details, please see “Playback Screen” at page 64.

Network Backup

Click “ ” (Miscellaneous Control) → “ ” (Backup) to go into the “Download” page as follows, and you can select a specific time range or event to make a video backup remotely. For details, please see “Backup” at page 46.



8.1.3 AP Control Panel

After setting up the network information, login user name and password, double-click “ ” on the PC desktop to open and log into the AP control panel. You will see a screen similar to the following with 7 major sections:

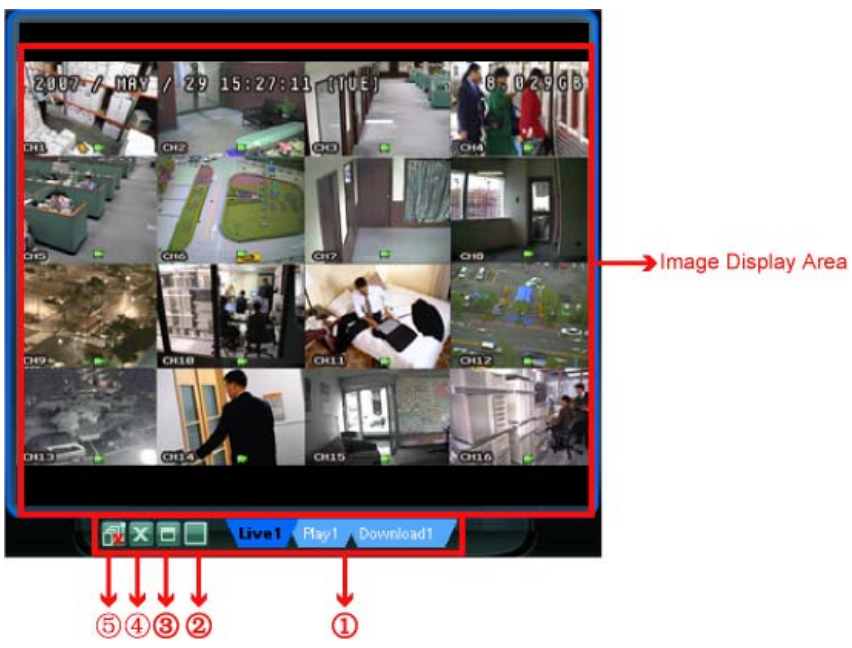
①	Image Display
②	Address Book
③	Miscellaneous Control
④	Record
⑤	Snapshot
⑥	Information
⑦	DVR Control

NO.	Button	Function	Description
①	N/A	Image Display	The place where the images are displayed. For details, please see “8.1.4 AP Functions” at page 43.
②		Address Book	Click to show the predefined IP address(es). You can add, remove or search the IP address to log in the DVR remotely. Two sub-functions are available for this button: Address Book and Search. For details, please see “Address Book ” at page 44.
③		Miscellaneous Control	Click to show the main operation functions: audio volume control, color setting, backup, DVR setting, upgrade, and find event logs.

NO.	Button	Function	Description
			For details, please see “Miscellaneous Control ” at page 45.
④	/	Record	Click to start / stop the manual recording.
⑤		Snapshot	Click to take a snapshot of the current view. The snapshot will be saved in the path you specified in “Record Setting”. Please refer to “Record Setting” at page 47 for details.
⑥		Information	Click to show the current network connection details. For details, please see “Information ” at page 65.
⑦		DVR Control	Click to go to the DVR control panel to operate the DVR remotely. For details, please see “DVR Control ” at page 66.

8.1.4 AP Functions

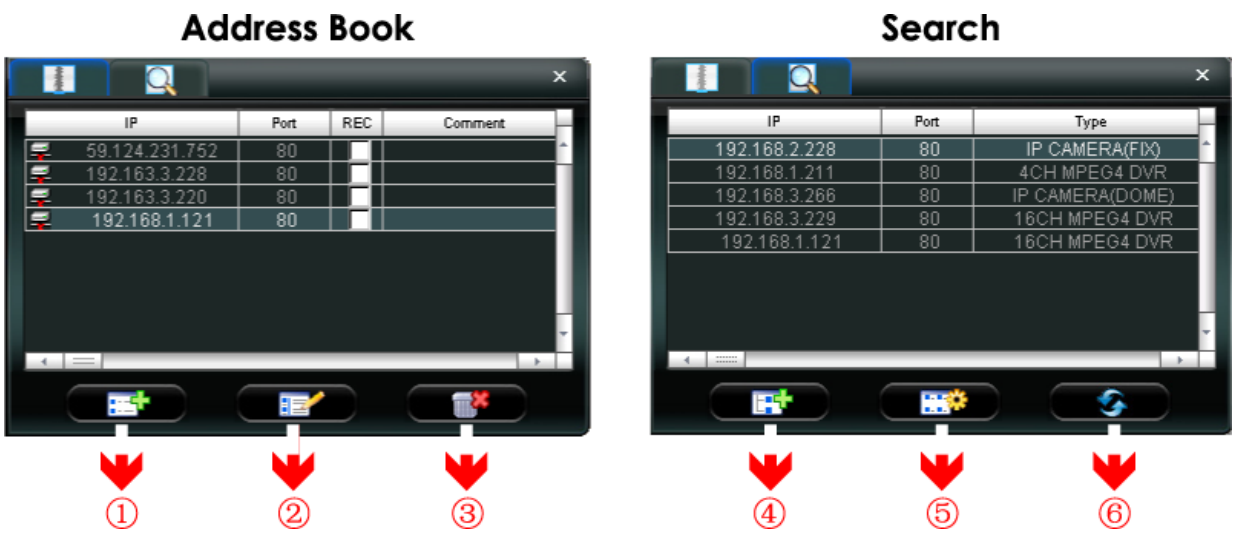
Image Display



NO.	Button	Function	Description
①	Live1 Play1 Download1	Live / Playback / Download Display Switch	If you want to switch among the live view, playback view and download view, click the blue tab “Live”, “Play” or “Download” to make a switch. You can have multiple live views, playback views and download views (totally up to 16 views) controlled and switched all in this AP interface. **Live**: When you are logged in, this tab with the live view is displayed by defaults. **Play**: When a video clip is selected in “Logs” and played, this tab with the palyback view is displayed. **Download**: When the network backup is in progress, this tab with the downloaded video clip is displayed.
②	/ / /	Expand All Views	To see all views in the image display area if you have many views and do not want to switch each view by clicking the blue tab described above, click to choose a proper split view (1-cut / 4-cut / 9-cut / 16-cut) which best suits your needs. The selected view will be indicated with a red frame around it.
③		Full Screen	Click to view the images in the full screen mode. To exit the full screen mode, press “Esc” key on the keyboard.
④		Close	Click to close the current image display view. If the last image display view is closed, you will be logged out automatically.
⑤		Close All Views	Click to close all the image display view and disconnect from the connected device(s).

Address Book

This view is displayed when the AP is activated for you to log in / out the DVR from the current address list, or search the available IP address as follows:



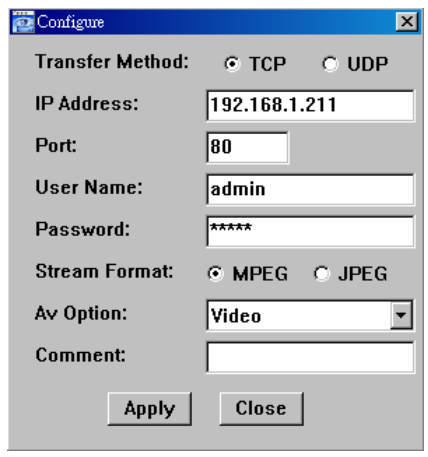
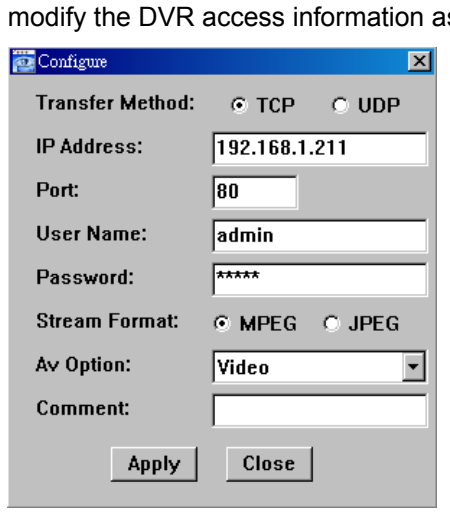
➢ **(Address Book)**

Click to view the pre-defined DVR access details.

To log in, choose one IP address from the address list, and click the address twice; to log out, click the connected IP address twice.

Tip: You can also click "" or "" in the image display section to log out (see "Image Display" at page 43).

You can also create new IP address information, or modify or remove the current IP address information.

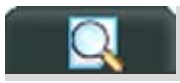
NO.	Button	Function	Description
1		Add	Click to directly add one IP address for login. Key in the DVR access information needed, and click "Apply" and "Close". 
2		Edit	Select one current IP address from the address list, and click this button to modify the DVR access information as needed. 

NO.	Button	Function	Description
3		Remove	Select one IP address from the address list, and click this button to delete it.

REC

When the AP is connected to more than 1 device, and not all devices are necessary to enable the manual record function, check “REC” for the connected device(s), and its manual record function will be on.

Note: When the AP is connected to more than 1 device, click “ ” will record the live views for all the connected devices. To enable the manual record function for the specific device(s), please set from this view.

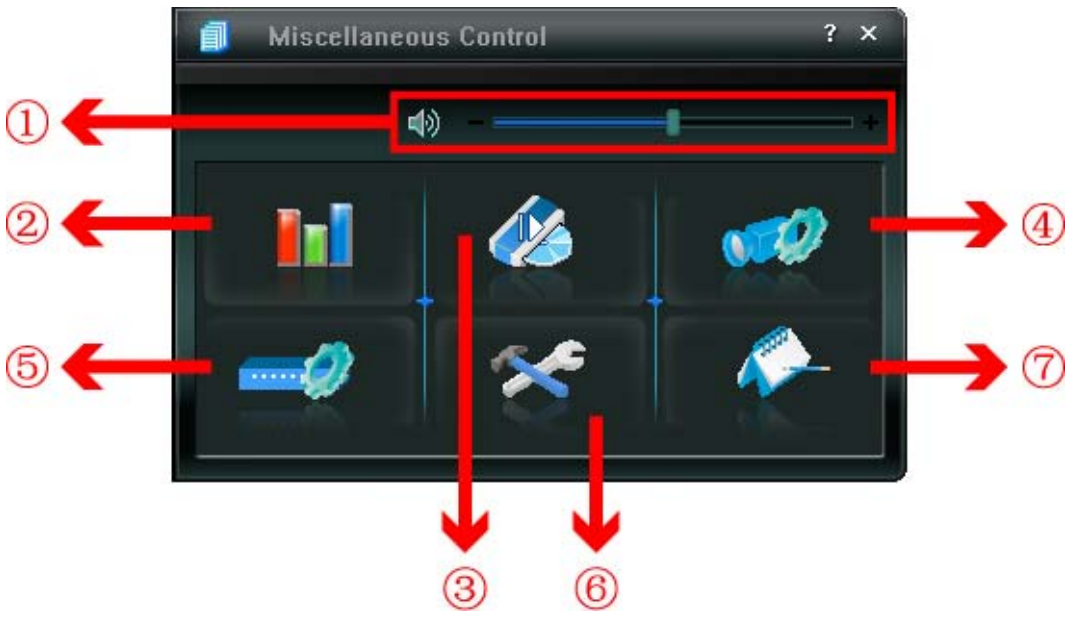
➢  **(Search)**

Click to search and view the available IP address(es) for the DVR connection. You can choose one address to add into the address book, edit the details, or update the address list.

NO.	Button	Function	Description
4		Add into address book	Select from the available IP address list, and click this button to add the selected address to the address book.
5		Setting	Select from the available IP address list, and click this button to edit the setting.
6		Refresh	Click to update the available IP address list.

Miscellaneous Control

Click “” (Miscellaneous Control) on the AP control panel, and 7 functions are available as follows:

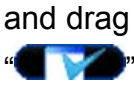


NO.	Button	Function	Description
①		Audio Volume Control	To adjust the volume of the audio channel, press and drag the volume slider.
②		Color Setting	Click this button to adjust the brightness / contrast / hue / saturation for a single channel or the whole channels. For details, please see “Color Setting” at page 46.
③		Backup	To make a video backup remotely, click this button, and you will go to the download setting page. For details, please see “Backup” at page 46.
④		Record Setting	Click to go to the detailed record setting. Please refer to “Record Setting” at page 47 for details.
⑤		Dvr Setting	Click to go into the detailed DVR setting. Please refer to “Dvr Setting” at page 47 for details.

NO.	Button	Function	Description
⑥		Tools	Click to update the firmware version, multilingual OSD and boot display of your DVR remotely. Please refer to “Tools” at page 59 for details.
⑦		Status List	Click to view all event and recording logs, search the desired log(s) by date, or playback the recording of the selected log. For details, please refer to “Status List” at page 62.

➢ Color Setting

Click “ ” to go into the “Color Setting” page, and you can adjust the brightness / contrast / hue / saturation for a single channel or all channels.

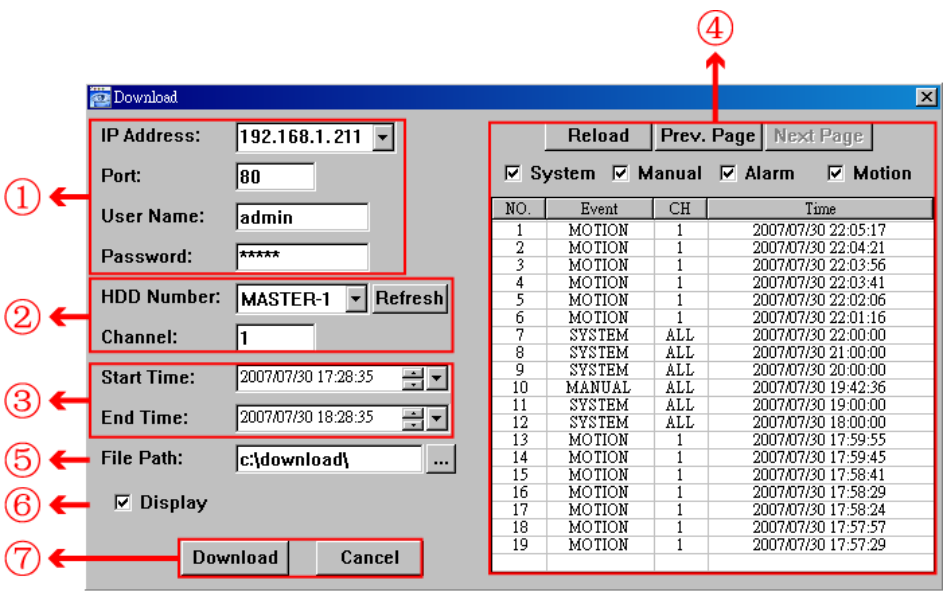
Choose the desired channel from the drop-down list, and click and drag the slider to make adjustment. Click “ ” to apply the change to the selected channel, or “  ” to apply to all channels.

Note: You need to be a supervisor to operate this function. For details, please see “Account” at page 50.

➢ Backup

Click “ ” (Backup) to go into the “Download” page, and you can select a specific time range or event to make a video backup remotely.

Note: You need to be a supervisor to operate this function. For details, please see “Account” at page 50.



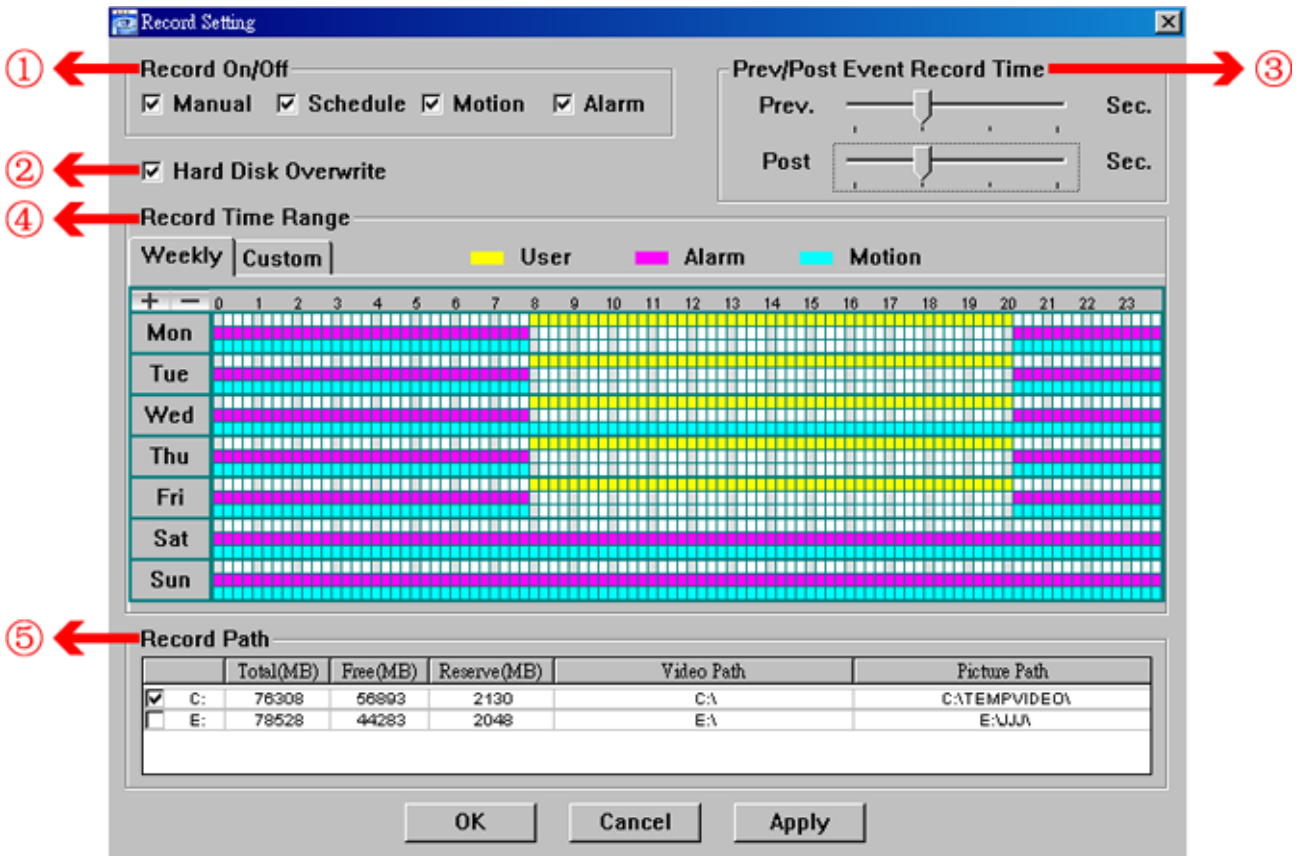
NO.	Function	Description
①	IP Address / Port / User Name / Password	Check if the network connection information of the DVR within which contains the video data you need is correct.
②	HDD Number / Channel	Specify the hard disk (HDD Number) and channel number (Channel) within which have the video data you need.

NO.	Function	Description
③	Download by Time	Specify the time range within which has the video data you want in the “Start Time” and “End Time” columns.
④	Download by Event	Select an event log from the event list. This list shows all logs in the specified DVR from the latest to the earliest. • To quickly find the events you need, check or uncheck the event type “System” / “Manual” / “Alarm” / “Motion”, and select the log you want. • To view the earlier or later logs that are not shown in the current page, click “Prev. Page” or “Next Page”. • To refresh the event list, click “Reload”.
⑤	File Path	Assign the location where the backup files are saved.
⑥	Display	To view the backup images simultaneously when the download process is in progress, select the checkbox “Display”. You will see the backup images while the images are being downloaded to the PC or notebook. To simply backup images without previewing, deselect the checkbox “Display”. You will only see a message box indicating the total time needed, the current status and the saving location.
⑦	Download / Cancel	Click “Download” to start or “Cancel” to discard the video backup.

➢ Record Setting

Press “ ” to go into the “Record Setting” page, and you can set the following items:

- Record type
- Hard disk overwriting
- Pre- / post-alarm record time
- Record time setting
- Record path



Record type

In this section, you can select which type of the recording will be enabled. There are 4 options: Manual / Schedule / Motion / Alarm.

Hard disk overwriting

To overwrite the recorded data from the earliest to the latest when the hard disk is full, check “Hard Disk Overwrite” checkbox.

Pre- / post-alarm record time

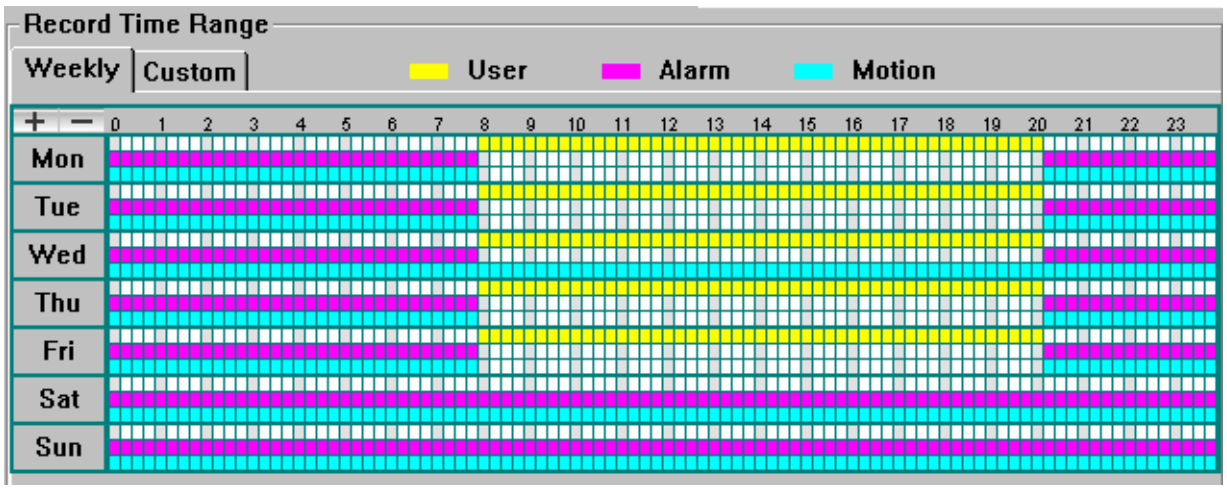
Select the pre-/post-alarm recording time from 0 sec. to 60 sec.

Record time setting

There are two ways to set the record time: Weekly and Custom.

◆ Weekly

Click “Weekly” tab, and you will see a weekly time table indicating the week days (Mon ~ Sun) and hours (0 ~ 24), similar to the figure below:



X axis: 0 ~ 24 hours. Each time interval within a square is 15 minutes.

Y axis: Monday ~ Sunday.

Operation: You can set the record schedule for 3 record types as needed in this time table:

1st timeline -- Manual record, indicated in yellow,

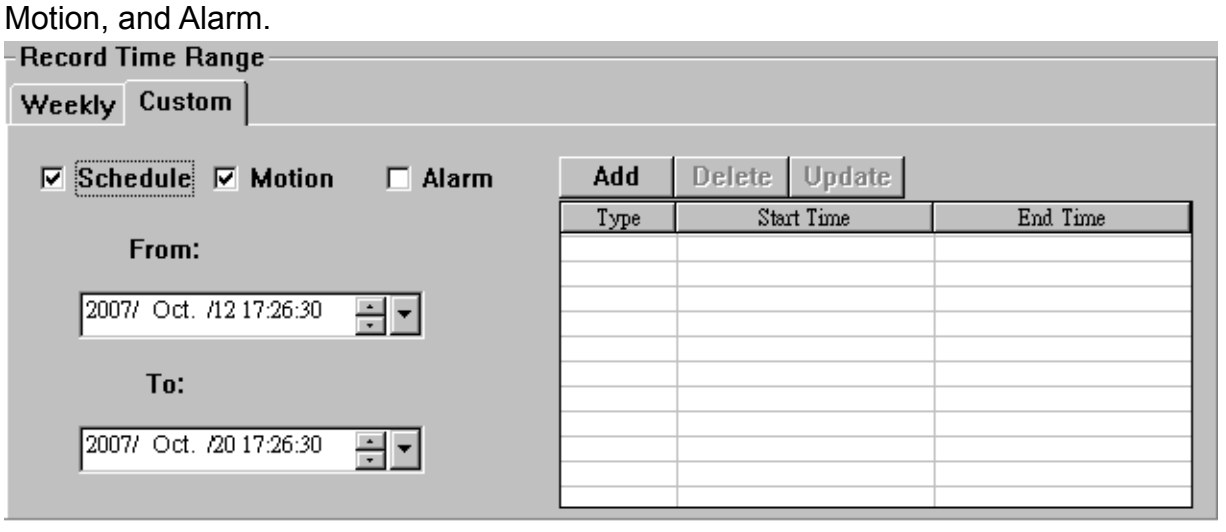
2nd timeline -- Alarm record, indicated in magenta, and

3rd timeline -- Motion record, indicated in cyan.

Click and hold the start time point, and drag to the end time point to set the record time range.

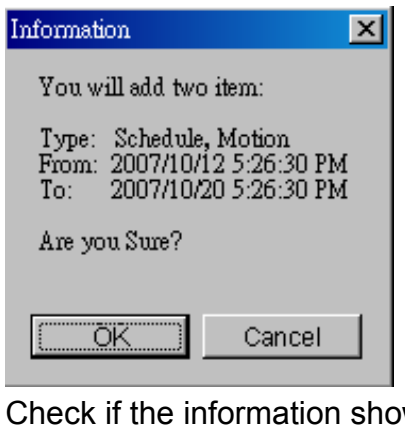
◆ Custom

Click “Custom” tab, and you can set a more specific record time range for the 3 record types: Schedule, Motion, and Alarm.



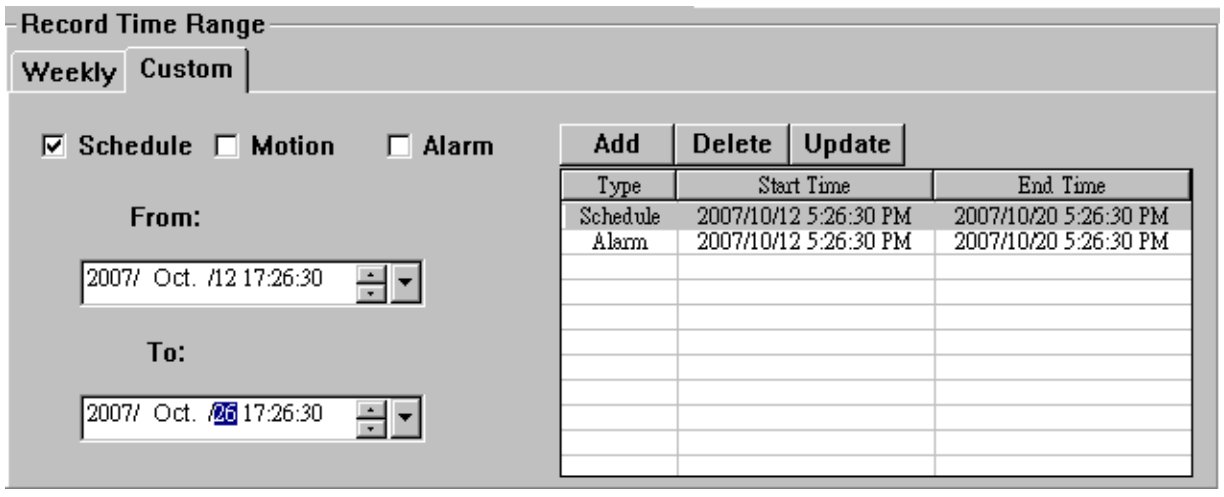
How to add a new time setting:

1. Check the record type you want to schedule the recording.
2. Set the start time (From) and end time (To).
3. Click “Add” to add the time range you just set into the schedule table. Before adding the time range, you will be prompted to confirm as follow:



4. Check if the information shown is correct. Click “OK” if the information is correct. Click “Cancel” if the information is wrong.

How to modify / delete a current time setting:



1. Select the schedule setting you want to modify from the schedule table. The setting will be displayed in the left setting panel.
2. Modify the setting in the left setting panel, and click “Update”.
3. You will be prompted to confirm the setting. Click “OK” if the information is correct. Click “Cancel” if the information is wrong.
4. To delete one schedule setting, select it, and click “Delete”.

Record Path

Select and view the location for saving the recorded video and snapshot pictures.

To change the saving path for the recorded video clips or snapshots, check the drive you want, click the cell of “Video Path” or “Picture Path” twice, and select a new path for saving the video clips or snapshots.

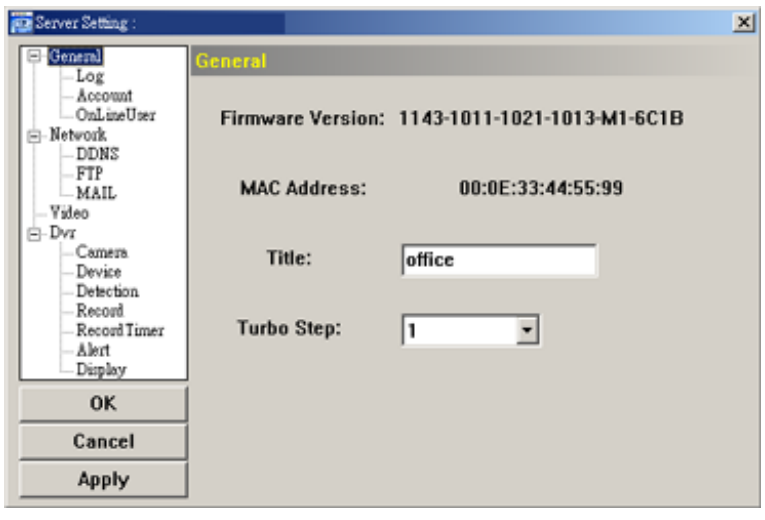
➢ Dvr Setting

Click “ ” to view, set or modify the DVR setting. All the changes you make here will be applied to the connected DVR.

Note: You need to be a supervisor to operate this function. For details, please see “Account” at page 50.

General

In “General” and its sub-menus, “Log”, “Account” and “OnLineUser”, you can view and set some common settings, such as the turbo step, make account setting, and check the information for all current on-line users.

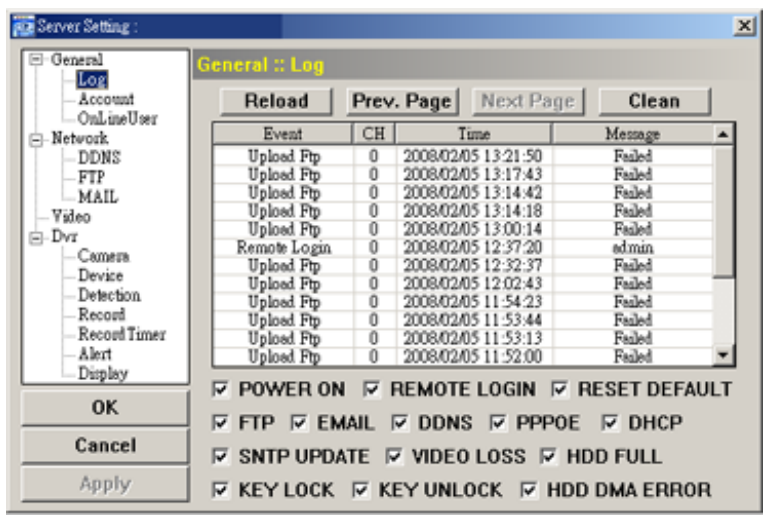


In “General”, you will see the following items:

Item	Description
Firmware Version	Display the current firmware version of your DVR.
MAC Address	Display the MAC address.
Title	Provide a title for this DVR. Only 16 characters are allowed.
Turbo Step	Speed up the menu selection under the AP from 1 to 30. Ex: If the value of the turbo step is set to 5, one mouse-click will function as 5 mouse-clicks when you click one of the buttons / / / in the DVR control panel.

◆ Log

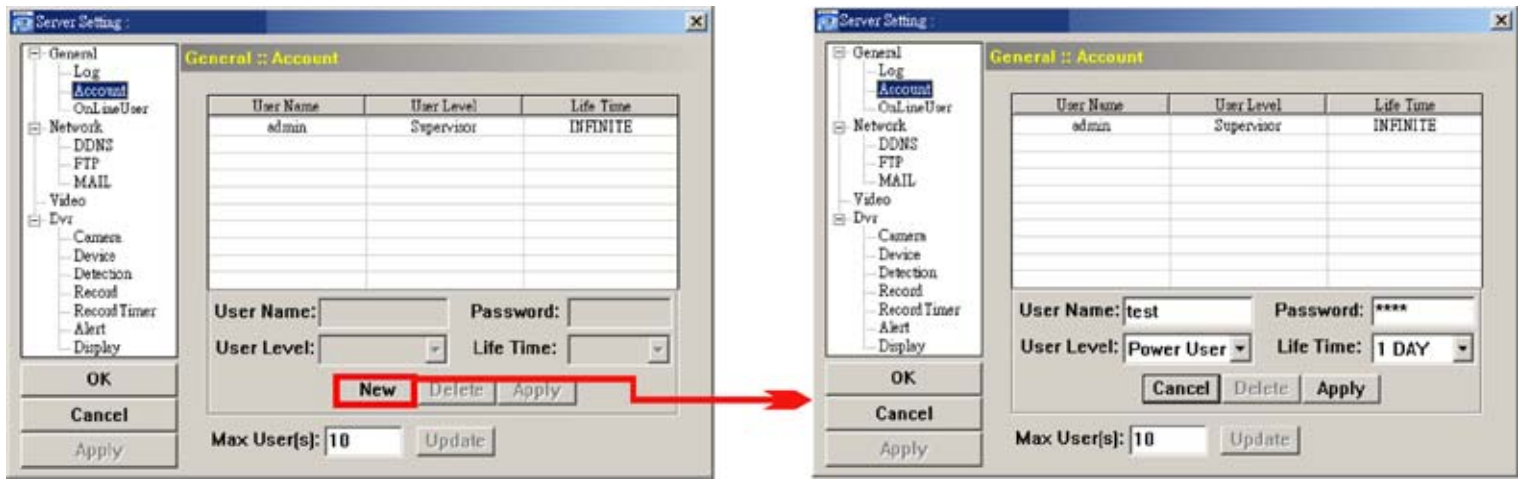
In “General” → “Log”, you can view the system event log(s) of the connected DVR for reference.
To check the previous / next page if there are more than one page, click “Prev. Page” / “Next Page”.
To refresh the event list, click “Reload”; to clear all log(s), click “Clean”.



◆ Account

In “General” → “Account”, you can create a new account for login, or delete or modify the existing account setting.

- To add an account, click “Add”, and fill in the following columns. Then, click “Save” to save your setting and create a new account.



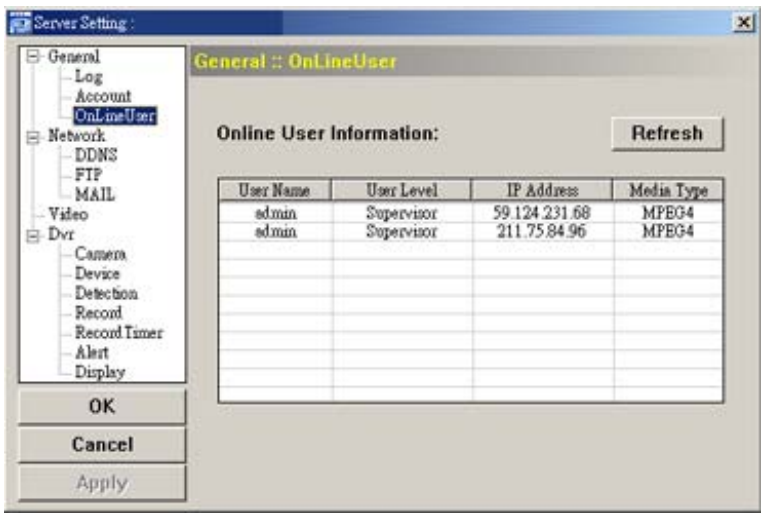
Column	Description
User Name	Set a user name that will be used for remote login. The user name allows up to 10 characters.
Password	Set the password that will be used for remote login. The password allows up to 8 characters.
User Level	Set the security level of an account to give the permission to control different AP functions. There are 4 user levels: Supervisor, Power User, Normal User and Guest. For the functions each level is allowed to use, please see the information below:

Column	Description				
		Supervisor	**Power User**	**Normal User**	**Guest**
	Address Book	●	●	●	●
	Miscellaneous Control				
	Color Setting	●	**X**	**X**	**X**
	Backup	●	**X**	**X**	**X**
	Record Setting	●	●	●	●
	Dvr Setting	●	**X**	**X**	**X**
	Tools	●	**X**	**X**	**X**
	Log	●	●	●	●
	Record	●	●	●	●
	Snapshot	●	●	●	●
	Information	●	●	●	●
	Dvr Control	●	● (except Menu key)	● (except Menu & audio channel keys)	**X**
Life Time	Select how long this account is allowed to stay online (1 MIN / 5 MIN / 10 MIN / 1 HOUR / 1 DAY / INFINITE)				

- To modify an existing account, select the account you want, change the setting, and click “Save”.
- To remove an existing account, select the account you want, and click “Delete”.
- To save your changes, click “Save”.
- To define the maximum account creation number, key in the number in “Max User(s)” column from 1 to 20, and click “Update”.

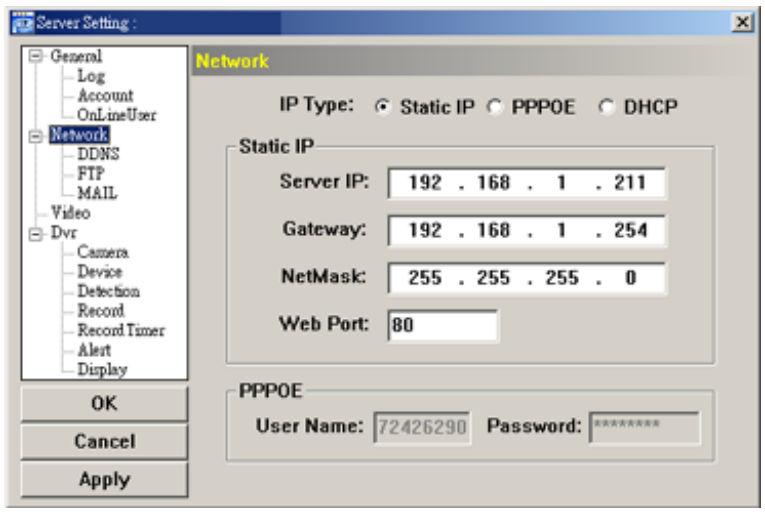
◆ OnLineUser

In “General” → “OnLineUser”, you can check all the online user information. To update the user information, click “Refresh”.



Network

In “Network” and its sub-menu, “DDNS”, you can set the DVR network configuration. The network configuration allows the DVR to connect to the LAN or Internet.



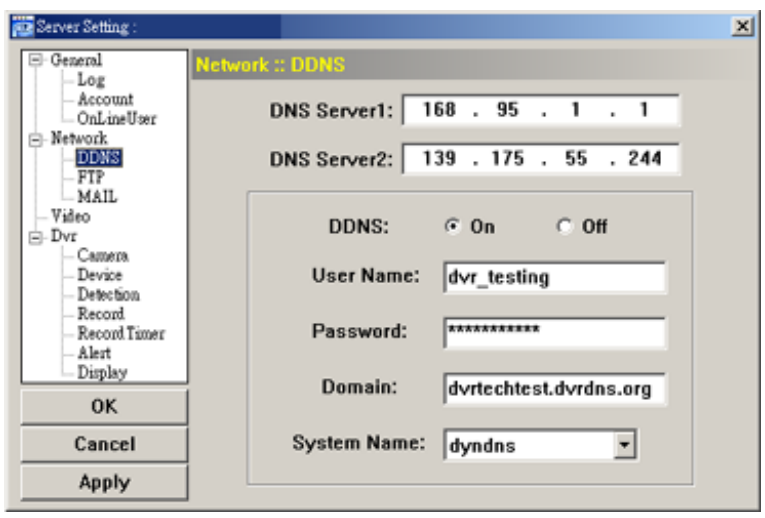
Select the network type you will be using for DVR connection. There are 3 network connection types: Static IP, PPPOE and DHCP.

Note: PPPOE and DHCP network connection types are required to apply the DDNS service to get a "Hostname" to correspond to a dynamic IP address. Please refer to "DDNS" at page 52 for details.

Function	Description
Web Port	Typically, the default TCP port used by HTTP is 80. However, in some cases, it is better to change this port number for added flexibility or security. The valid web port number ranges from 1 to 9999.
Static IP	Computers are communicated and recognized by their own unique IP addresses over the Internet. "Static IP" provided by your ISP (Internet Service Provider) means the IP address of the computer is fixed. Key in the server IP address, gateway and network information provided by your ISP provider to configure a static IP network connection.
PPPOE	PPPOE stands for Point-to-Point Protocol over Ethernet. Users can easily have the Internet service as long as they're ready for the following things: 1) Insert an Ethernet card into the PC. 2) Obtain the ADSL service via any ISP. 3) Obtain and install the PPPOE software CD. When everything is ready, choose the "PPPOE" IP type, and key in the user name and password provided by your ISP. Then, select "Network" → "DDNS" to set DDNS settings. For detailed DDNS settings, please refer to "DDNS" at page 52.
DHCP	This DHCP function needs to be supported by a router or cable modem network with the DHCP service. Choose the "DHCP" IP type, and select "Network" → "DDNS" to set DDNS settings. For detailed DDNS settings, please refer to "DDNS" at page 52.

◆ DDNS

You need to apply a DDNS account before setting PPPOE or DHCP connection. DDNS is a service for transforming the dynamic IP corresponding to a specific "host name". Go to a website which provide free DDNS services and apply a host name.



DDNS Apply:

a). Go to a website which provide the free DDNS service, for example, http://www.dyndns.org.

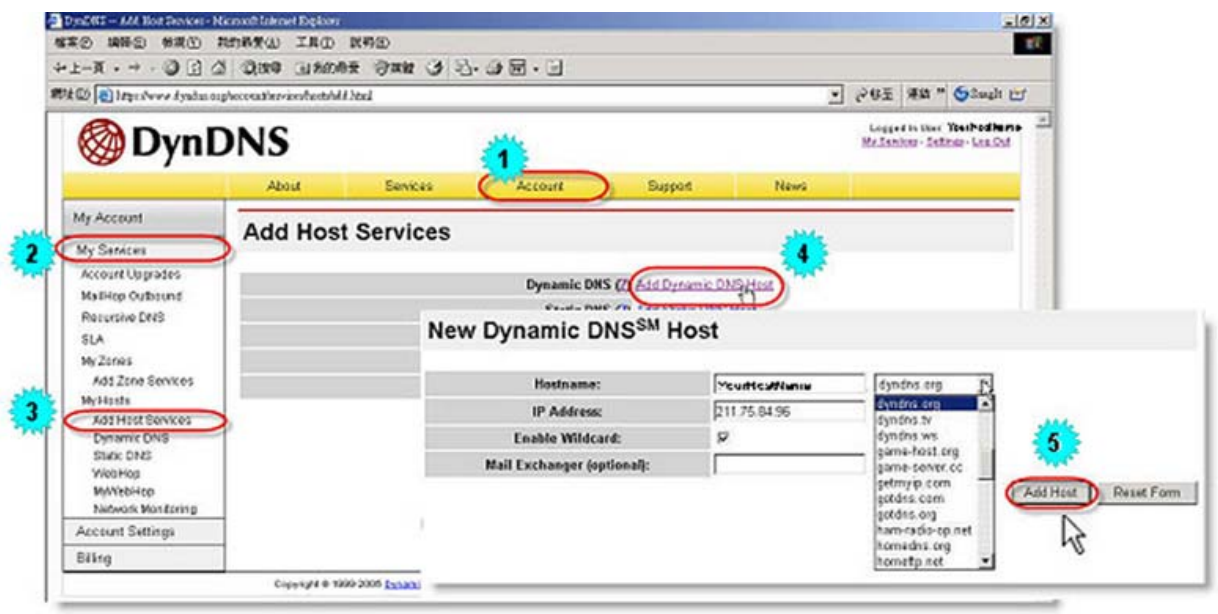
b). Create an account in DynDNS.

c). After creating one account, users will receive a confirmation E-mail within a few minutes. To complete

the registration, please follow the instructions received.
Users must complete these steps within 48 hours to complete the registration. If the confirmation E-mail was not received within an hour, request “password reset” (http://www.dyndns.org/account/resetpass/).

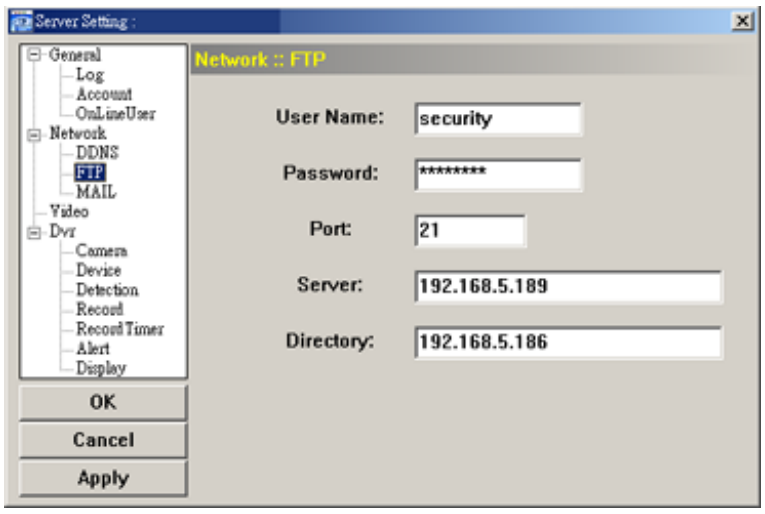
d). Use the DDNS username and password to log into the DynDNS.

e). Create a host name:
After login, click “Account” → “My Service” → “Add Host Services” → “Add Dynamic DNS Host”. Enter and choose a host name, and click “Add Host”. Then, your DDNS host name is created.



◆ FTP

If the FTP notification function is activated, the DVR will upload the captured images to the specified FTP site once alarm-trigger or motion-trigger recording happened. Please enable the function of FTP notification in the “Alert” menu first.



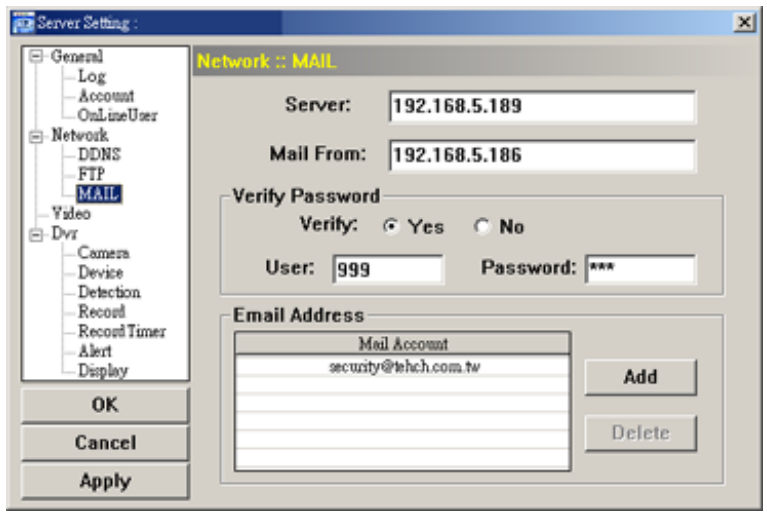
FTP Notification Function:

a. Enter the detailed FTP information.

b. After finishing the setting, press “APPLY” to confirm.

◆ MAIL

If the e-mail notification function is activated, the DVR will send an e-mail notification to the specified recipients once alarm-trigger or motion-trigger recording happened. Please enable the function of e-mail notification in the “Alert” menu first.



Mail Notification Function:

a. Add the recipients' E-mail accounts in "Mail Account" column.

Please type the entire E-mail address in the "Mail from" column to ensure E-mails will not be blocked by SMTP.

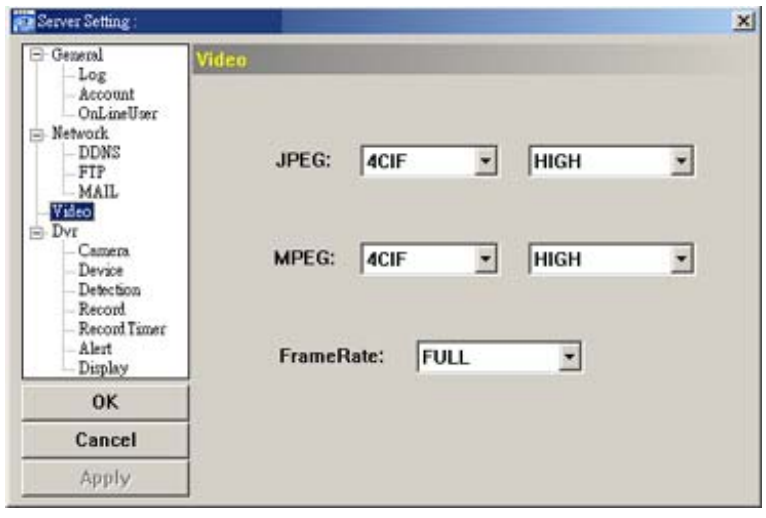
For detailed information (SMTP server, username and password), please check with your E-mail service supplier.

b. Some mail servers are required to verify the password. Please enter the "user name" and "password".

c. After finishing the setting, press "APPLY" to confirm.

Video

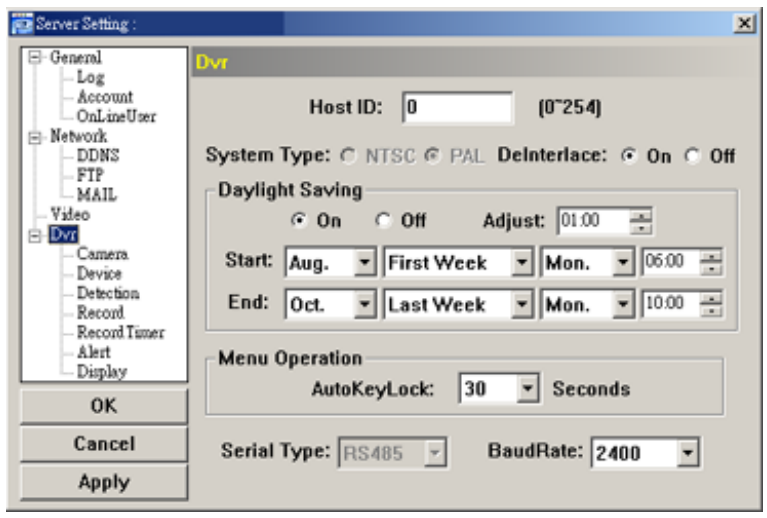
In "Video", you can set the video web transmission size and quality, and the frame rate for transmitting.



Function	Description
JPEG	Choose the image size (4CIF / CIF) and picture quality (BEST / HIGH / NORMAL / BASIC) when the web transmission format is JPEG.
MPEG	Choose the image size (4CIF / CIF) and picture quality (BEST / HIGH / NORMAL / BASIC) when the web transmission format is MPEG.
FrameRate	Choose the frame rate for transmitting (FULL / HALF / ONE THIRD / QUARTER / FIFTH).

Dvr

In "Dvr" and its sub-menus, "Camera", "Detection", "Record", "Record Timer", "Alert" and "Display," you can set DVR general functions, such as the host ID, the record schedule, alerts, motion detection, and text or icon display, etc.

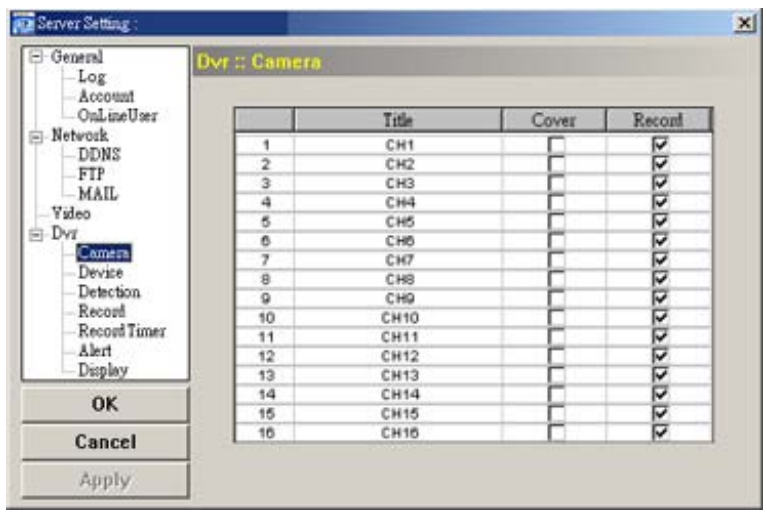


In “Dvr”, you can see the following items:

Function	Description
Host ID	Set the host ID from 0 to 254. The default value is 0.
System Type	Display the current system type (NTSC / PAL). It’s automatically detected.
DeInterlace	Choose to reduce (ON) or ignore (OFF) the vibration of the paused picture.
Daylight Saving	Specify whether to use daylight saving time (ON / OFF). If this function is enabled, set the time period (START / END), and adjust the daylight saving time in hours (ADJUST).
Menu Operation	Select the time-out in seconds after which the DVR keys will be automatically locked when no one is operating the DVR for a period of time (0 / 30 / 60 / 120). The default value is 30.
Serial Type	Display the serial type (RS485) used by this DVR. It’s automatically detected.
BaudRate	Choose a baud rate used by this DVR from the drop-down list (2400 / 9600 / 19200 / 38400 / 57600 / 115200). The default value is 2400.

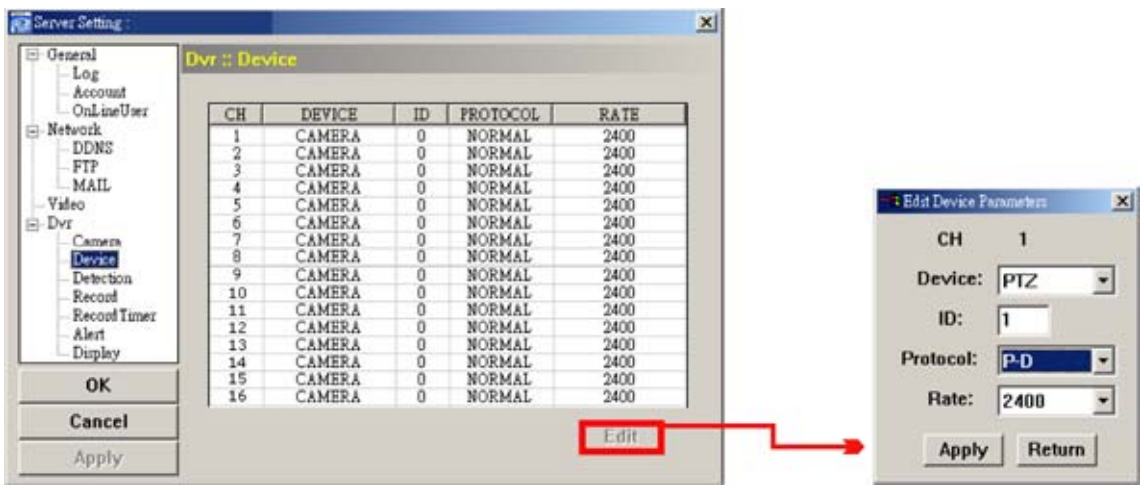
◆ Camera

In “Dvr” → “Camera”, you can specify a channel to enable the recording function by selecting the check box “Record”, choose to activate the “Covert Recording” function by selecting the check box “Cover”, and rename the channel title which will be displayed in the live view screen by double-clicking the channel title.



◆ Device

Select the device type (CAMERA / PTZ) according to the connected cameras for each channel. Press “Edit” to enter the setting box.



The submenu items are described below:

a. Device Type: Choose either normal camera or PTZ camera.

b. ID No.: Set the ID number (0 ~ 255) of the connected PTZ camera.

c. Protocol Type: Choose “NORMAL” or “P-D” protocol. It is recommended to select PELCO-D protocol for the connected PTZ camera.

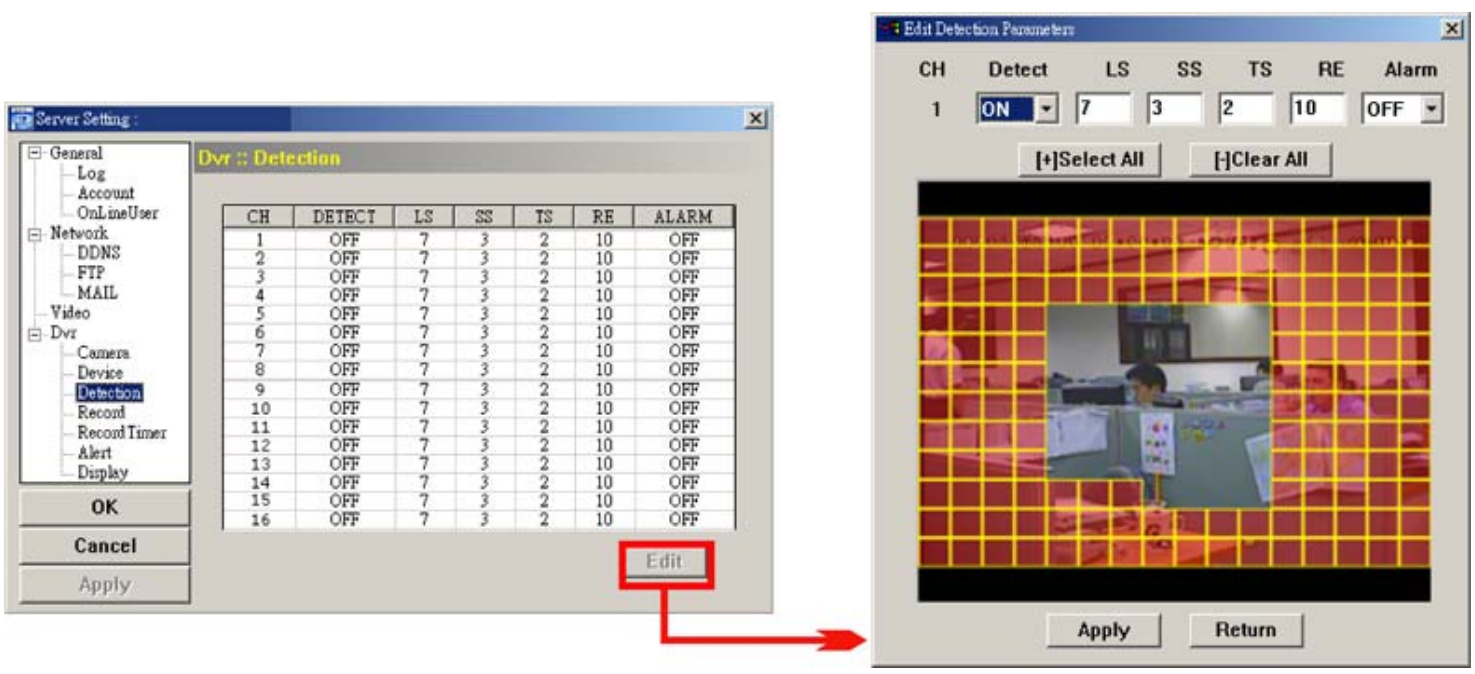
d. Baud Rate: Set the baud rate of each channel (2400, 4800, 9600, 19200, 38400, 57600).

e. After setting, press “OK” and then press “APPLY” button to confirm.

Note: This function can also be set up at the DVR side. Please refer to section “7.1.7 Remote” at page 33.

◆ Detection

Select the desired channel, and click “Edit” to enter the motion detection sensitivity and area-setting page.



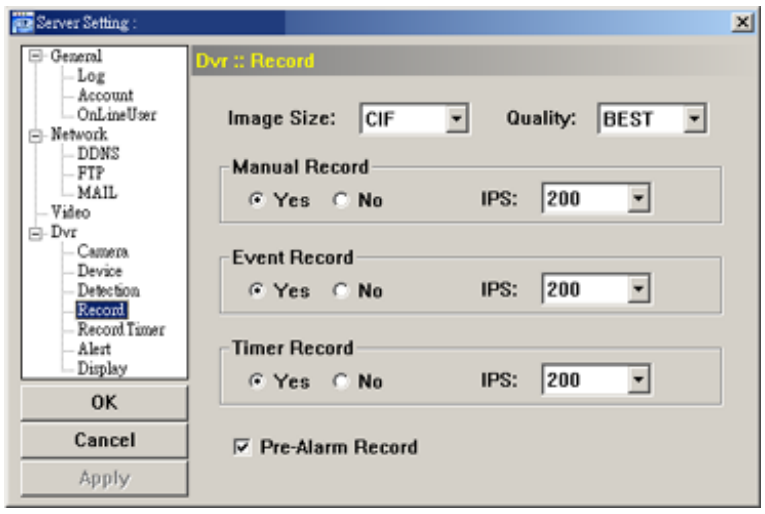
Please see the description below for each function:

Function	Description
DETECT	Enable (ON) or disable (OFF) the function of “Motion Detection”. If this function is enabled, you might need to set the motion detection sensitivity or simply keep the default values. For details, please see the description below.
Motion Detection Sensitivity (LS / SS / TS / RE)	Set the detection sensitivity in 4 different adjustable factors (LS / SS / TS / RE). LS “Level of Sensitivity”, is to set the sensitivity of comparing two different images. The smaller the value is, the higher sensitivity for motion detection. The highest sensitivity setting is 0, and the lowest sensitivity setting is 15. The default value is 7. SS “Spatial Sensitivity”, is to set the sensitivity for detecting the size of one object (the number of the

Function	Description
	grids) on the screen. The smaller the value is, the higher sensitivity for motion detection. The highest sensitivity setting is 0, and the lowest sensitivity setting is 15. The default setting is 3. TS "Time of Sensitivity", is to set the sensitivity regarding how long one object stays in the detection area and triggers the recording. The smaller the value is, the higher sensitivity for motion detection. The highest sensitivity setting is 0, and the lowest sensitivity setting is 15. The default setting is 2. RE "Reference", is to set a reference for detection. The default value is 10, which means the DVR will compare 10 continuous images at one time according to the sensitivity of LS, SS, TS simultaneously. The bigger the value is, the higher sensitivity for motion detection. The highest sensitivity is 61.
Alarm	Select N.C. (normal closed) / N.O. (normal opened) / OFF for the alarm polarity. For N.C. / N.O. contact details, please refer to "APPENDIX 2".
Motion Detection Setting Area	Set the motion detection area by selecting the area grids with your mouse. Pink grids represent the area that is not being detected while the transparent grids are the area under detection. You can set multiple areas under detection. Click "－" (Clear All) to set the whole area undetected. Click "＋" (Select All) to set the whole area under detection.
Apply / Return	To save the setting, click "Apply" and return to "Dvr Setting" window. To discard the setting, click "Return" to directly return to "Dvr Setting" window without saving.

◆ Record

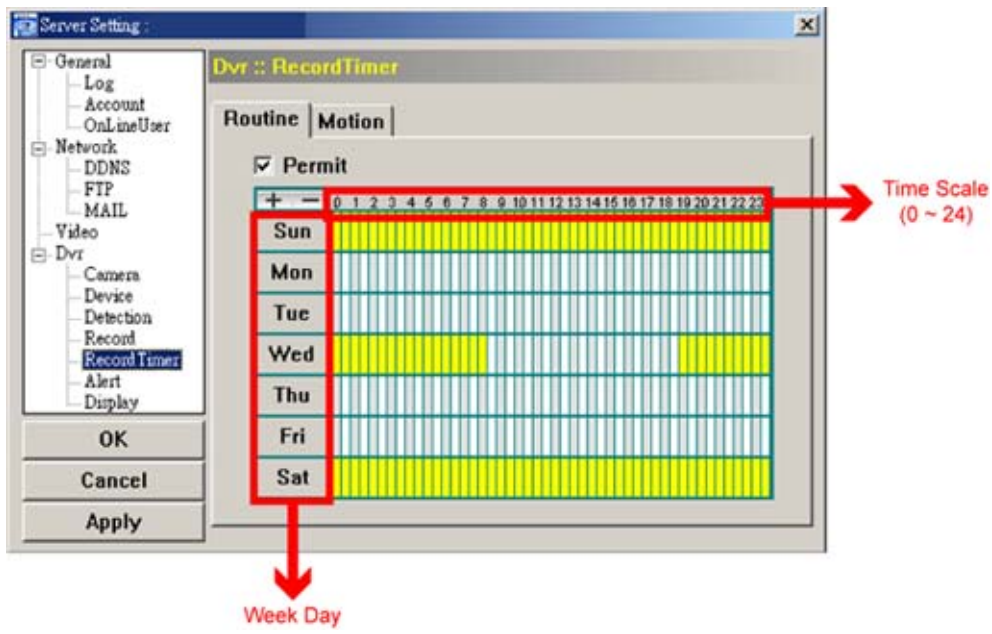
In "Dvr" → "Record", you will see the following items for DVR record settings.



Function	Description
Image Size / Quality	Choose the image size (FRAME / FIELD / CIF) and quality (BEST / HIGH / NORMAL / BASIC).
Manual Record / Event Record / Timer Record	Select the record type that the DVR will take recording (Yes / No), and select the IPS setting for the selected record type.
Pre-Alarm Record	Check this option if you want to enable the pre-alarm recording function. When any alarm is triggered, the DVR will record 8MB video data before the alarm event is actually happened.

◆ Record Timer

In this menu list, you can set the record schedule for normal recording or motion recording.



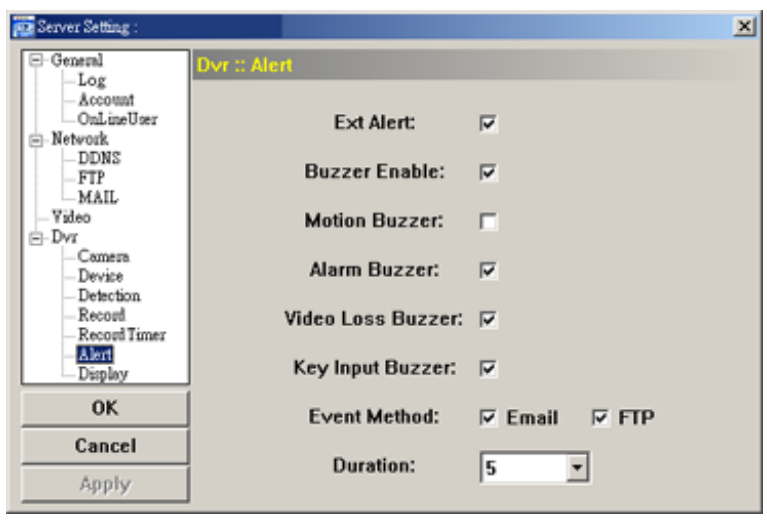
- Permit
  Select this checkbox to allow the record timer setting to be applied to the connected DVR. If this checkbox is deselected, the setting will not be applied to the connected DVR even when you click “Apply” and “OK”.

- Routine / Motion
  Click “Routine” tab to select the time range for continuous recording, or
  “Motion” tab to select the time range within which the recording will be on when any movement is detected.

- Time Table
  Find the day and time you want to enable the recording. Then, click to select the time interval(s). Each interval represents 30 minutes.
  To enable the recording all the time, click “＋”; to clear the record timer setting, click “－”.

◆ Alert

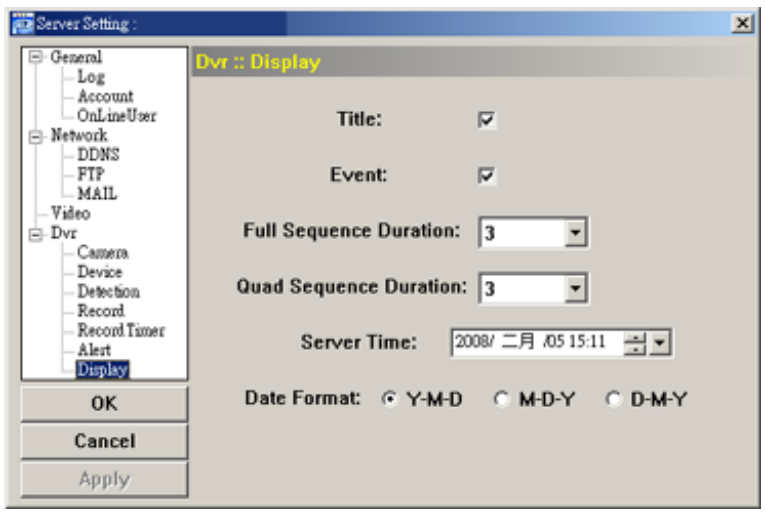
In “Alert”, you can set the DVR to beep for notification when there’s any alert happened. Check the buzzer option you want, and set how long the beep sound will be lasted.



Function	Description
Ext Alert	Check this option to enable the external alert.
Buzzer Enable	This option must be checked for “Motion Buzzer”, “Alarm Buzzer” and “Video Loss Buzzer” to take effects.
Motion Buzzer / Alarm Buzzer / Video Loss Buzzer / Key Input	Check one of these 4 options, and you will hear the beep sound when any movement is detected / the alarm is triggered / video loss occurs / any DVR key is pressed.
Duration	Set the alert and buzzers to beep for 5 / 10 / 20 / 40 seconds.

◆ Display

In “Display”, you can choose whether to display some text indication or icons, set the channel display switch time-out, set the DVR time remotely, and select the date format (Y-M-D / M-D-Y / D-M-Y).



Function	Description
Title	Select to display the channel title in the live view.
Event	Select to display the event symbol in the live view.
Full Sequence Duration / Quad Sequence Duration	Set the time-out in seconds (3 / 5 / 10 / 15) after which the channel display will be switched by one channel (Full Sequence Duration) or by four channels (Quad Sequence Duration).
Server Time	Set the DVR time remotely.
Date Format	Choose the date display format appropriate to your location (Y-M-D, M-D-Y and D-M-Y).

➢ Tools

Click “ ” to upgrade the firmware version, multilingual OSD and boot display of your DVR (Update Server).

Note: You need to be a supervisor to operate this function. For details, please see “Account” at page 50.

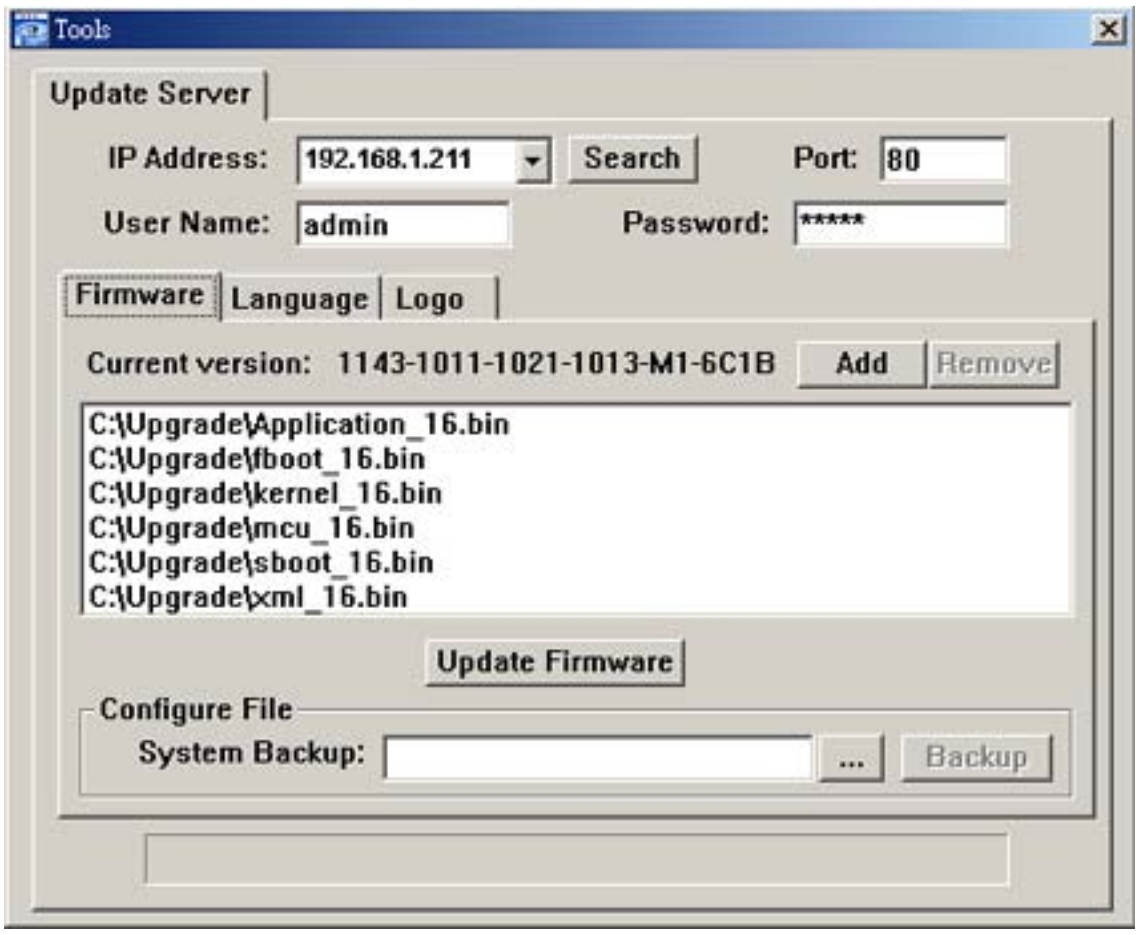
Note: Do not disconnect the power of your DVR while the upgrade process is in progress, or the DVR functions may not work properly or be unable to use.

◆ Update Server

3 update options are available for this function: Firmware, Language and Logo.

Before performing any update, finish the following settings first:

1) Choose the IP address of the DVR whose firmware needs to be updated from the drop-down list, or click “Search” to find.
2) Key in the user name, password and port number used to access your DVR remotely.
3) Select the update option (Firmware / Language / Logo) you want. For details, please see the description below.



- **Firmware**

  To upgrade your DVR firmware remotely, click “Firmware” tab, and follow the steps below:

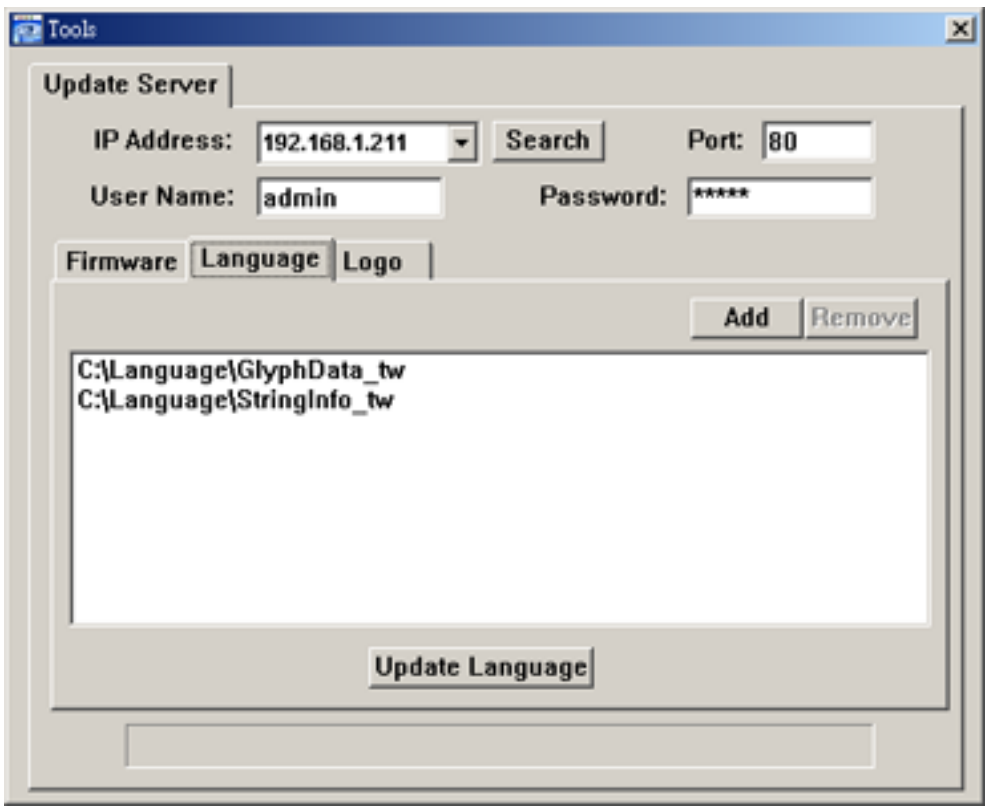
  a). In the “Firmware” section, you will see the current firmware version. To upgrade the firmware version of your DVR, click “Add” to locate and select the firmware file. The file will be shown in the firmware list.

  b). If you want to backup your system before upgrading the firmware version of your DVR, select “System Backup” in the “Configure File” section, click “**...**” to specify the location for saving system backup, and click “Backup” to start the backup process.

  c). To start upgrading the DVR firmware, choose the file from the firmware list, and click “Update Firmware” to start the upgrade process.

- **Language**

To update the DVR OSD language, click “Language” tab, and follow the steps below:



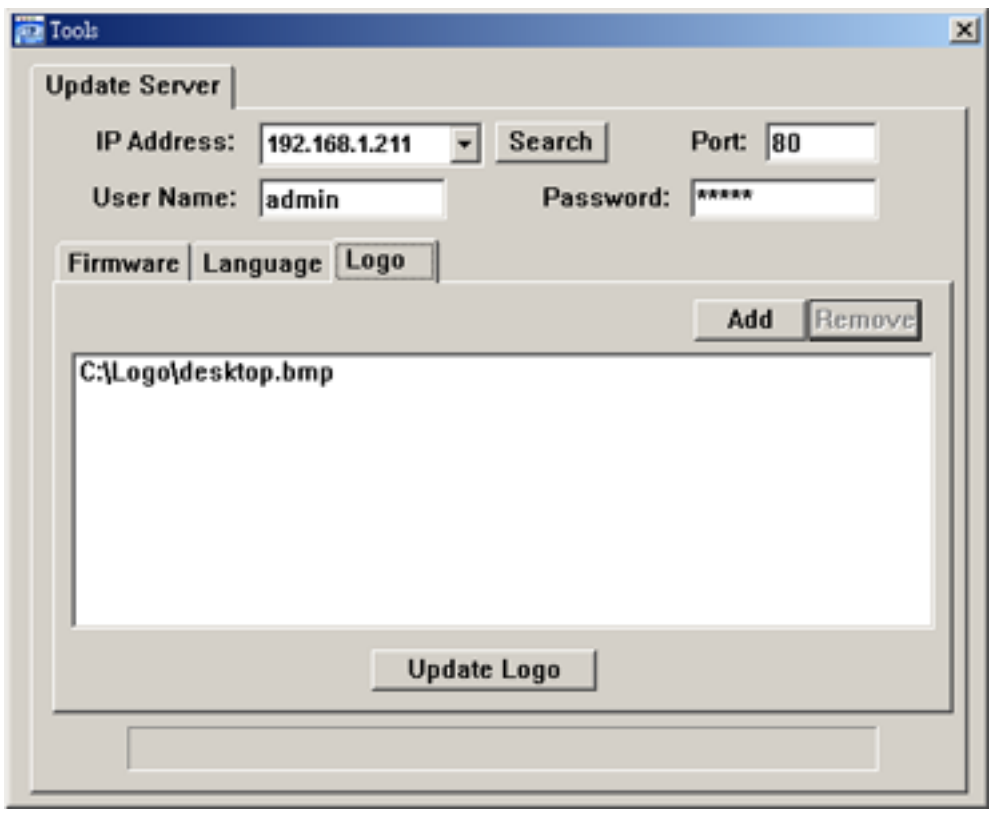
a). Get the language files you want to update from your distributor.

b) Click “Add” to locate and select the files needed. The files will be shown in the list. If you add the wrong file, select it and click “Remove”.

c). To start updating the OSD language, choose the files from the list, and click “Update Language” to start the upgrade process.

- **Logo**

To replace the logo shown in the DVR boot display, click “Logo” tab, and follow the steps below:



a). Prepare a graphic file in the “BMP” format for replacement.

Note: Use the image software to set the image size to 320 * 240, and save the image as an 8-bit (64-color) image in the "BMP" format.

b) Click “Add” to locate and select the graphic file. The file will be shown in the list. If you add the wrong file, select it and click “Remove”.

c). To start updating the logo, choose the file from the list, and click “Update Logo” to start the upgrade process.

➢ Status List

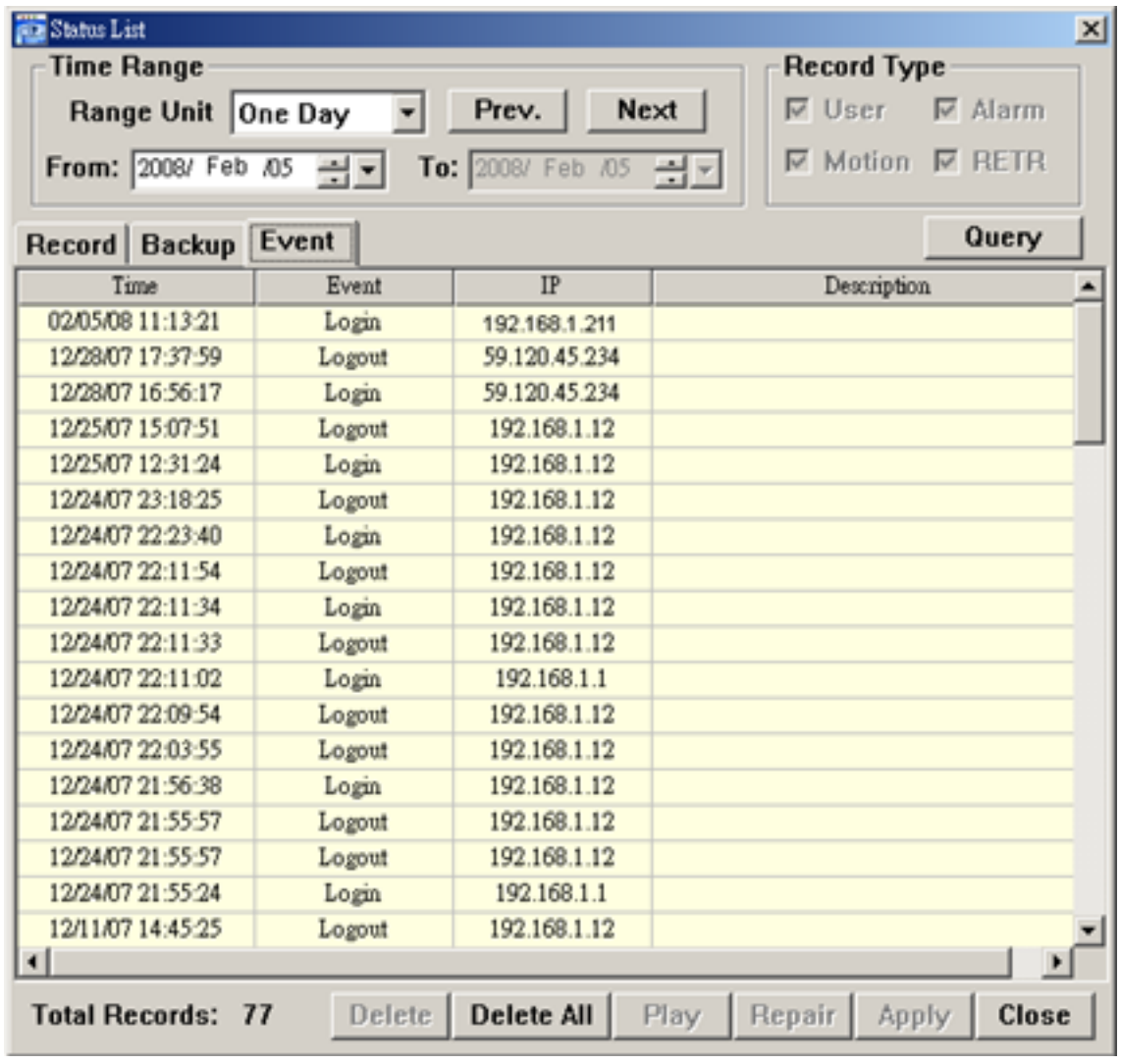
Click “ ” to view all the event and record logs (All), or search for the specific log(s) by date or by record type (Condition).

There are three types of logs: Record, Backup and Event. To playback the recorded data for a specific record or backup log, select the log, and double-click to start the video playback.

For detailed playback operation, please refer to “Playback” at page 64.

◆ Event

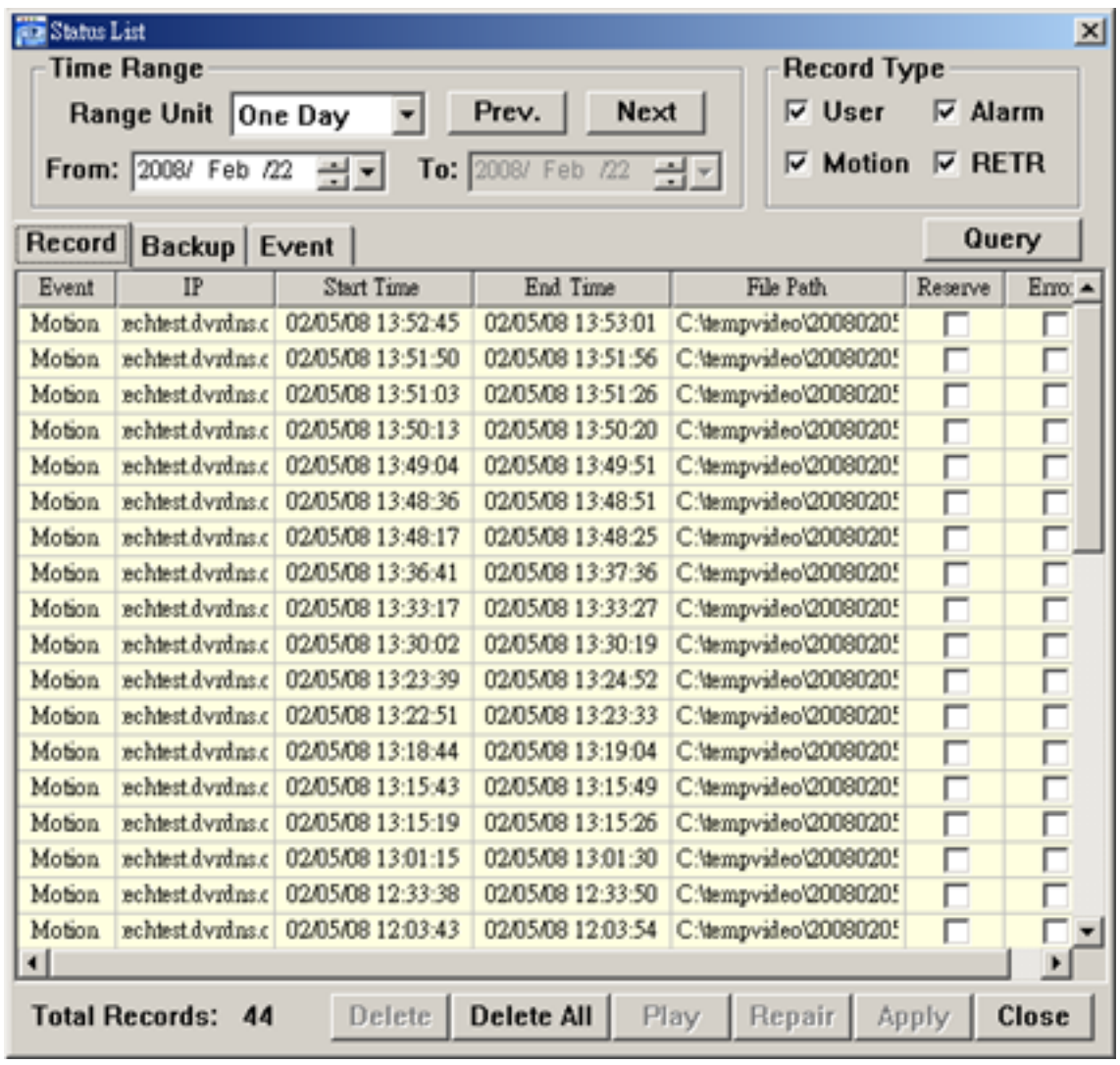
Select “Event” to search for the specific event log(s) by date.



Button / Function	Description
Range Unit	Set different time range unit (One Day / One Week) of the event logs.
Date Selection (From / To)	Choose the specific date range including the event / record logs you might want.
Query	When all the search criteria are set, click to search the specified logs. The result will be displayed in the log list, arranged by time from the earliest to the latest.
Delete / Delete All	Click “Delete” to remove the selected log(s), or click “Delete All” to clear the current log list. **Tip:** To select more logs all at once, press and hold the “Ctrl” key on your keyboard, and click to select the logs you want to remove.
Close	Click “Close” to quit this window.

◆ Record

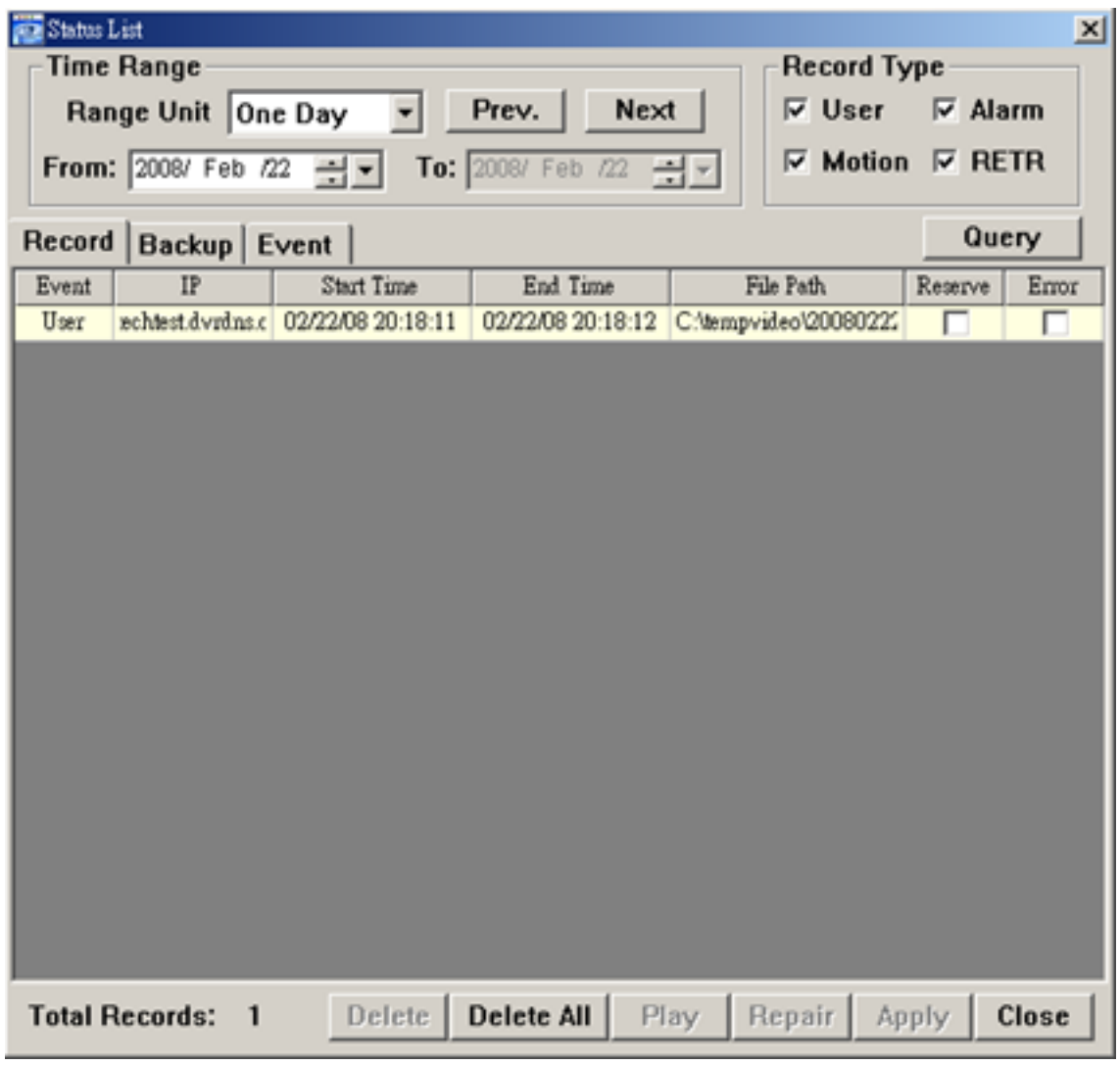
Select “Record” to search for the specific log(s) by date or by record type.



Button / Function	Description
Range Unit	Set different time range unit (One Day / One Week) of the event logs.
Date Selection (From / To)	Choose the specific date range including the event / record logs you might want.
Record Type	**This section is enabled only when the “Record” tab is selected.** Select the record type you want to search (User / Alarm / Motion).
Query	When all the search criteria are set, click to search the specified logs. The result will be displayed in the log list, arranged by time from the earliest to the latest.
Delete / Delete All	Click “Delete” to remove the selected log(s), or click “Delete All” to clear the current log list. **Tip:** To select more logs all at once, press and hold the “Ctrl” key on your keyboard, and click to select the logs you want to remove.
Play	Click to play the selected record log. The playback panel will be shown for your further operation. For playback details, please see “Playback Screen” at page 64.
Repair	Click to fix the log with errors.
Apply	**This button is available in the “Record” tab when the “Reserve” checkbox is checked or unchecked.** If you want to keep an important record log for future reference and it can’t be removed, check the “Reserve” checkbox, and click “Apply”. The selected log will be kept and won’t be deleted when somebody accidentally or intentionally chooses it and click “Delete” or “Delete All”.
Close	Click “Close” to quit this window.

◆ Backup

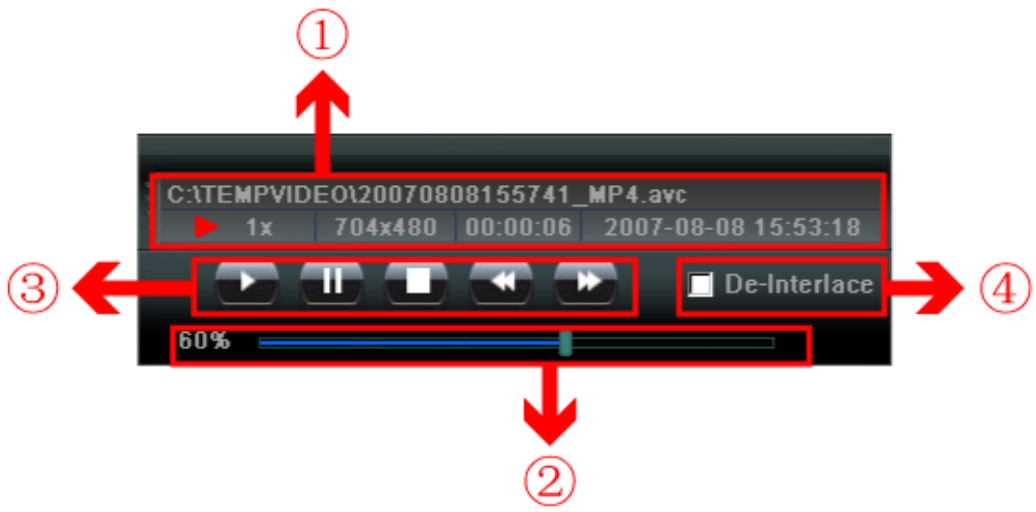
Select “Backup” to search for the specific log(s) by date.



Button / Function	Description
Range Unit	Set different time range unit (One Day / One Week) of the event logs.
Date Selection (From / To)	Choose the specific date range including the event / record logs you might want.
Query	When all the search criteria are set, click to search the specified logs. The result will be displayed in the log list, arranged by time from the earliest to the latest.
Delete / Delete All	Click “Delete” to remove the selected log(s), or click “Delete All” to clear the current log list. **Tip:** To select more logs all at once, press and hold the “Ctrl” key on your keyboard, and click to select the logs you want to remove.
Play	Click to play the selected download log. The playback panel will be shown for your further operation. For playback details, please see “Playback Screen” at page 64.
Close	Click “Close” to quit this window.

◆ Playback Screen

When you select and play the recorded data for a specific log in “ ” (Status List) → “Record” or “Backup”, you will immediately go into the playback mode, and the following playback panel appears. For the function of each part on the panel, please refer to the following description.



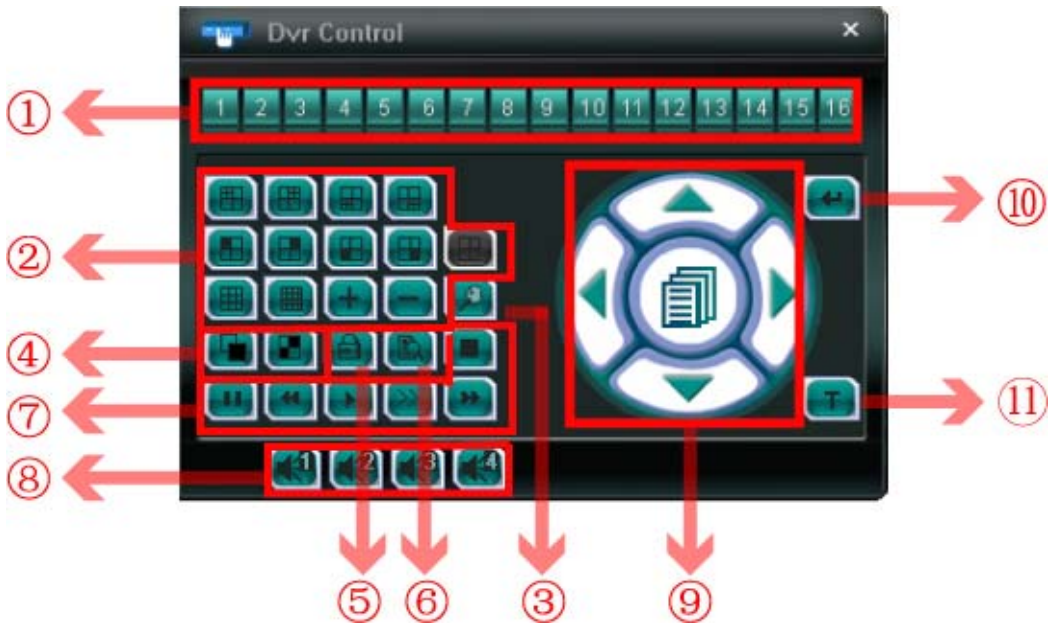
NO.	Function	Description
①	Playback / Download Info Display	This area shows the detailed playback / download information, such as the file name, record date and time, and the speed, etc.
②	Playback Progress Bar	This area shows the playback progress and the progress percentage.
③	Playback Operation	This area is enabled only when the playback is started. (Rewind) / (Forward) / (Stop) / (Pause) / (Play) **Rewind / Forward** Click once to get 2X fast rewind / forward, twice to get 4X, three times to get 8X, and four times to get 16X the highest.
④	De-Interlace	Click to reduce the vibration of the paused picture.

Information

To view the current network connection details, click this button.

DVR Control

When the AP is connected to the DVR, this DVR control panel will be enabled, and you can control the DVR remotely. For the function of each button, please refer to the following description.



NO.	Function	Description
1	Channel Selection	Click the channel No. (CH1 ~ CH16) to see the live view of the selected channel.
2		Click the view mode you want to see. There are 10 modes for your choice: View CH1, CH2, CH5 and CH6 View CH3, CH4, CH7 and CH8 View CH9, CH10, CH13 and CH14 View CH11, CH12, CH15 and CH16 View the 1st channel of the selected 4-cut view mode View the 2nd channel of the selected 4-cut view mode View the 3rd channel of the selected 4-cut view mode View the 4th channel of the selected 4-cut view mode View CH1 ~ CH9 View the whole 16 channels You can also click "+" or "−" to go to the previous / next channel of the selected channel. This 4-cut view button is disabled because this DVR doesn't support this button. To choose the quad view, please select / / / .
3	Digital Zoom	Click to zoom in / out the selected channel image.
4	Full Sequence / Quad Sequence	**Quad Sequence** Click to display the 4 quad display modes one by one. The 1st view is CH1, CH2, CH5 & CH6, the 2nd view is CH3, CH4, CH7 & CH8, the 3rd view is CH9, CH10, CH13 & CH14, and the 4th view is CH11, CH12, CH15 & CH16. When the 4th view is displayed, it will start from the 1st view again. To exit from this display mode, click any other channel display button. **Full Sequence** Click to display each channel one by one, starting from CH1. When CH16 is displayed, it will start from CH1 again. To exit from this display mode, click any other channel display button.

NO.	Function	Description
5	Key Lock	Click to enable the DVR key lock function. To unlock the DVR, key in your password, and click .
6	Search	Click " " to enter the DVR full search menu. You can check all the logs here, and select one of them to payback.
7	Playback	(Stop) / (Pause) / (Rewind) / (Play) / (Slow Playback) / (Forward) **Rewind / Forward** Click once to get 4X fast rewind / forward, twice to get 8X, three times to get 16X, and four times to get 32X the highest. **Slow Playback** Click once to get 4X slow playback and twice to get 8X slow playback.
8	Audio Channel Selection	 Click the button 1, 2, 3 or 4 to hear the audio from the audio channel 1, 2, 3 or 4. For the audio channel(s) of each model, please see "11). / " in the section "2.1 Front Panel" at page 4. In the live mode, you can only hear the live audio; in the playback mode, you can only hear the playback audio.
9	Menu and Arrow Keys	Click " " (Menu) to enter the menu / exit the menu mode. Click the arrow keys to move the cursor and make the selection: / : Move the cursor up / down to select the previous / next menu or sub-menu function, or change the setting. / : Move the cursor left / right to the previous / next sub-menu items.
10	Enter	Click " " to confirm the setting or enter your selection.
11	Turbo	To speed up the menu selection or the control of the PTZ camera via the AP, users can activate the turbo function by clicking " ".

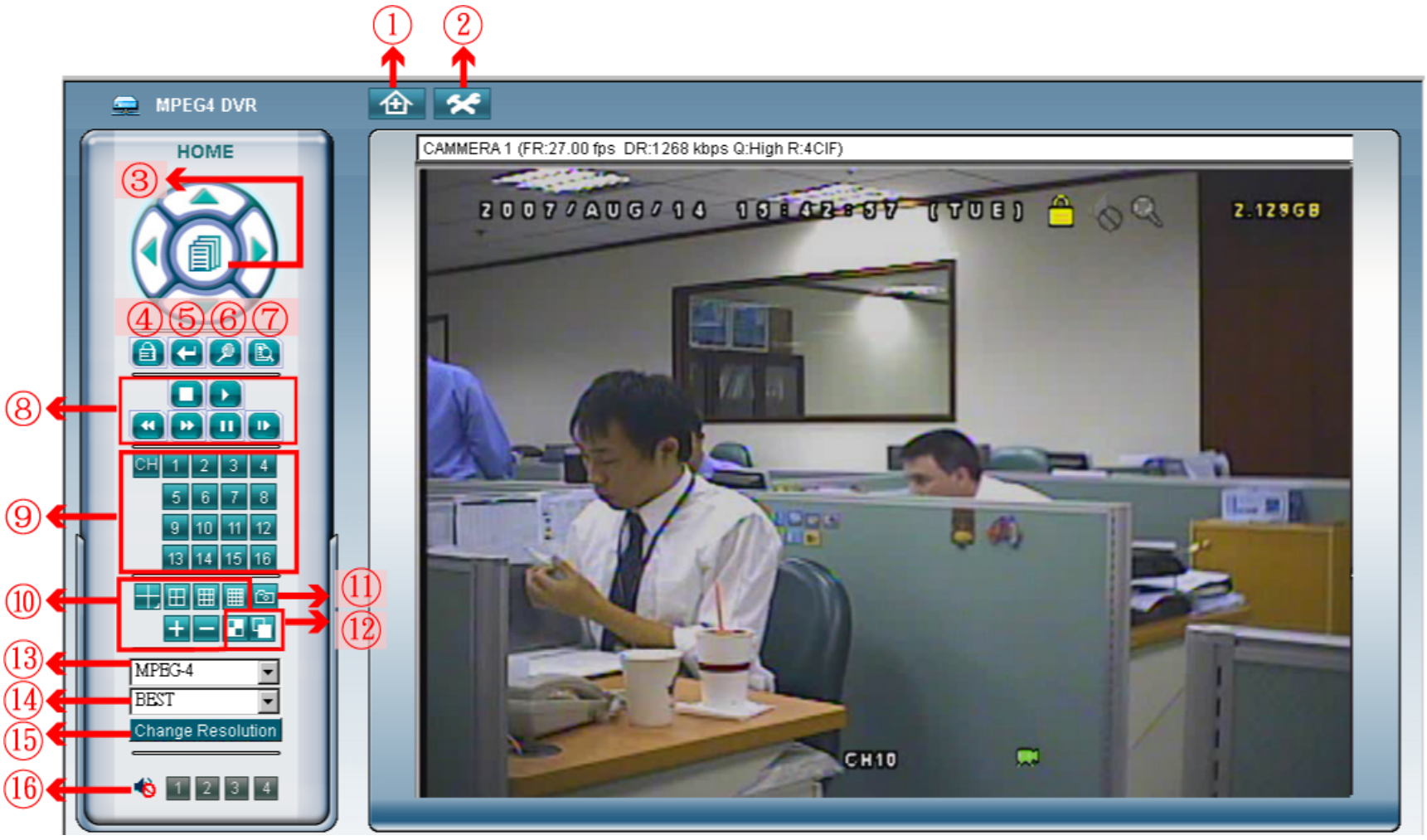
8.2 IE Web Browser

You can view the images or operate your DVR with IE web browser.

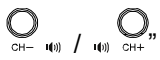
Note: The supported PC operation systems are Windows 2000 and Windows XP.

Step 1: Key in the IP address used by your DVR in the URL address box, such as 60.121.46.236, and press Enter. You will be prompted to enter the user name and password to access the DVR.
If the port number your DVR used is NOT 80, you need to key in the port number additionally. The format is ***ipaddress*:*portnum***. For example, for IP address 60.121.46.236 and port No. 888, please key in ”http://60.121.46.236:888” into the URL address box, and press “Enter”.

Step 2: Enter the user name and password, the same as the ones used at AP login, and press “OK”. You will see a similar screen as the following when the login information is correct.



NO.	Function	Description
1	Home	Press to go to the main page of the DVR
2	Config.	Press to go to the detailed DVR setting.
3	Menu and Arrow Keys	Press to enter the menu / exit the menu mode. Press the arrow keys to move the cursor and make the selection: / : Move the cursor up / down to select the previous / next menu or sub-menu function, or change the setting. / : Move the cursor left / right to the previous / next sub-menu items.
4	Key Lock	Press to enable the DVR key lock function. To unlock the DVR, key in your password, and press .

NO.	Function	Description
5	Enter	Press to confirm the setting or enter your selection.
6	Digital Zoom	Press to zoom in / out the selected channel image.
7	Search	Press to enter the DVR full search menu. You can check all the logs here, and select one of them to payback.
8	Playback control buttons	(Stop) / (Play) / (Rewind) / (Forward) / (Pause) / (Slow Playback) **Rewind / Forward** Press once to get 4X fast rewind / forward, twice to get 8X, three times to get 16X, and four times to get 32X the highest. **Slow Playback** Press once to get 4X slow playback and twice to get 8X slow playback.
9	Single Channel Selection	Press the channel No. (CH1 ~ CH16) to see the live view of the selected channel. You can also press or to go to the previous / next channel of the selected channel.
10	Display Mode	Press the display mode you want to see. There are 3 modes for your choice: Press / / to show 4-cut / 9-cut / 16-cut display.
11	Snapshot	Press to take a snapshot for the current view, and open another browser window to display the captured image.
12	Quad Sequence / Full Sequence	**Quad Sequence** Press to display the 4 quad display modes one by one. The 1st view is CH1, CH2, CH5 & CH6, the 2nd view is CH3, CH4, CH7 & CH8, the 3rd view is CH9, CH10, CH13 & CH14, and the 4th view is CH11, CH12, CH15 & CH16. When the 4th view is displayed, it will start from the 1st view again. To exit from this display mode, press any other channel display button. **Full Sequence** Press to display each channel one by one, starting from CH1. When CH16 is displayed, it will start from CH1 again. To exit from this display mode, press any other channel display button.
13	Web Transmission	**MPEG4 / JPEG / QuickTime** QuickTime is Apple Inc.'s multimedia software. You need to have QuickTime installed in you operation system first. When "QuickTime" is selected, you will be promoted to enter the user name and password to access the server of the DVR.
14	Change Quality	**BEST / HIGH / NORMAL / BASIC** Press to change the image quality.
15	Change Resolution	**4 CIF / CIF** Press to change the image resolution (4CIF: 720*480 / CIF: 352*240)
16	Audio Channel Selection	 To hear the audio for a channel that supports audio recording in the live or playback mode, click 1, 2, 3 or 4 to hear the audio from the audio channel 1, 2, 3 or 4. For the audio channel(s) of each model, please see "11).  / " in the section "2.1 Front Panel" at page 4. means the audio channel is not connected to the camera supporting audio.

8.3 QuickTime Player

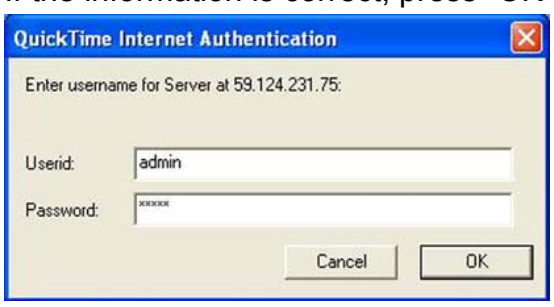
You can also use the QuickTime player to remotely log into the DVR and check the live view only.

Note: QuickTime is Apple's multimedia software. You need to have QuickTime installed in you operation system first, and you can access the DVR to see the live view.
If you have installed QuickTime, please skip Step 1.

Step 1: Go to Apple's official website to download QuickTime. The website address is as follows:
http://www.apple.com/quicktime/win.html
a). Click "Download" to go into the download page, and select to download the free player.
b). Leave your Email address, and press "Free Download Now" to download the latest QuickTime player.
c). When the download is completed, execute the "QuickTimeInstaller.exe" file, and follow the on-screen instructions to finish the installation procedure.

Step 2: Open your QuickTime player. Select "File" → "Open URL", and key in the URL address.
The URL format is "rtsp://**ipaddress**/live/mpeg4" (For example, "rtsp://**59.124.231.75**/live/mpeg4").
Click "OK" to continue.

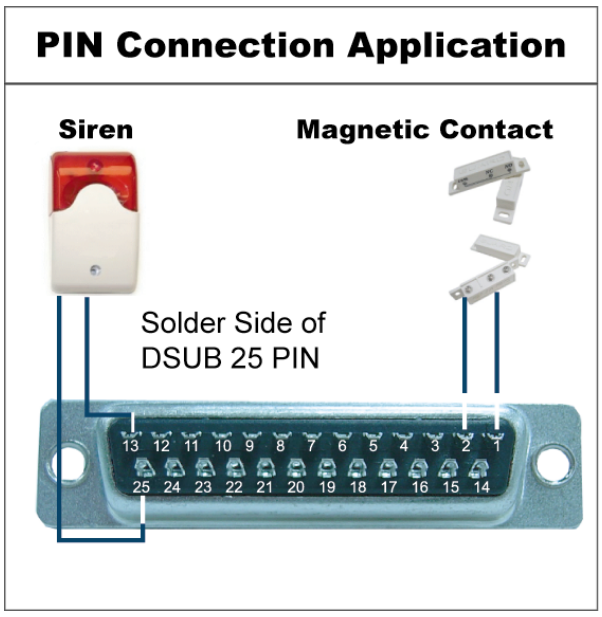
Step 3: A pop-up window will appear and prompt you to enter the authentication information. Key in the user name and password for accessing your DVR. The user name and password are the same as the ones you use to log into the AP.
If the information is correct, press "OK" to go on. If not, press "Cancel" to quit the accessing.



Step 4: When the login is successful, you will see a similar screen as the following.

APPENDIX 1 PIN CONFIGURATION

- **For 16CH DVR**

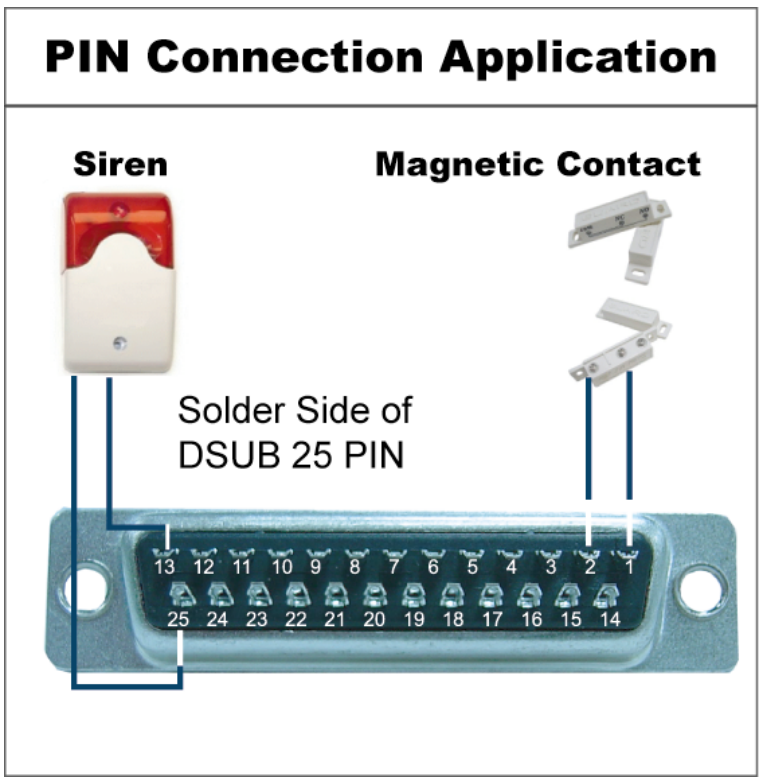

PIN Connection Application
Siren
Magnetic Contact
Solder Side of
DSUB 25 PIN
13 12 11 10 9 8 7 6 5 4 3 2 1
25 24 23 22 21 20 19 18 17 16 15 14

Siren: When the DVR is triggered by alarm or motion, the COM connects with NO and the siren with strobe starts wailing and flashing.

Magnetic Contact: When the magnetic contact is opened, the alarm will be triggered and the recording is on.

PIN	FUNCTION	DESCRIPTION
1	GND	GROUND
2~9	ALARM INPUT	Connect ALARM INPUT (PIN 2 -- 9) and GND (PIN 1) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will be on. PIN 2 is Alarm 8. Once the alarm is triggered, the CH8 of the DVR will start alarm-triggered recording. PIN 3 is Alarm 6. Once the alarm is triggered, the CH6 of the DVR will start alarm-triggered recording. PIN 4 is Alarm 4. Once the alarm is triggered, the CH4 of the DVR will start alarm-triggered recording. PIN 5 is Alarm 2. Once the alarm is triggered, the CH2 of the DVR will start alarm-triggered recording. PIN 6 is Alarm 16. Once the alarm is triggered, the CH16 of the DVR will start alarm-triggered recording. PIN 7 is Alarm 14. Once the alarm is triggered, the CH14 of the DVR will start alarm-triggered recording. PIN 8 is Alarm 12. Once the alarm is triggered, the CH12 of the DVR will start alarm-triggered recording. PIN 9 is Alarm 10 Once the alarm is triggered, the CH10 of the DVR will start alarm-triggered recording.
10	PIN OFF	NA
11	PIN OFF	NA
12	PIN OFF	NA
13	EXTERNAL ALARM NO	Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO. Attention: The voltage restriction is under DC24V 1A.
14	PIN OFF	NA
15~22	ALARM INPUT	Connect ALARM INPUT (PIN 15 – 22) and GND (PIN 1) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will be on. PIN 15 is Alarm 7. Once the alarm is triggered, the CH7 of the DVR will start alarm-triggered recording. PIN 16 is Alarm 5. Once the alarm is triggered, the CH5 of the DVR will start alarm-triggered recording. PIN 17 is Alarm 3. Once the alarm is triggered, the CH3 of the DVR will start alarm-triggered recording. PIN 18 is Alarm 1. Once the alarm is triggered, the CH1 of the DVR will start alarm-triggered recording. PIN 19 is Alarm 15. Once the alarm is triggered, the CH15 of the DVR will start alarm-triggered recording. PIN 20 is Alarm 13. Once the alarm is triggered, the CH13 of the DVR will start alarm-triggered recording. PIN 21 is Alarm 11. Once the alarm is triggered, the CH11 of the DVR will start alarm-triggered recording. PIN 22 is Alarm 9. Once the alarm is triggered, the CH9 of the DVR will start alarm-triggered recording.
23	PIN OFF	NA
24	PIN OFF	NA
25	EXTERNAL ALARM COM	Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO. Attention: The voltage restriction is under DC24V 1A.

- **For 8CH DVR**

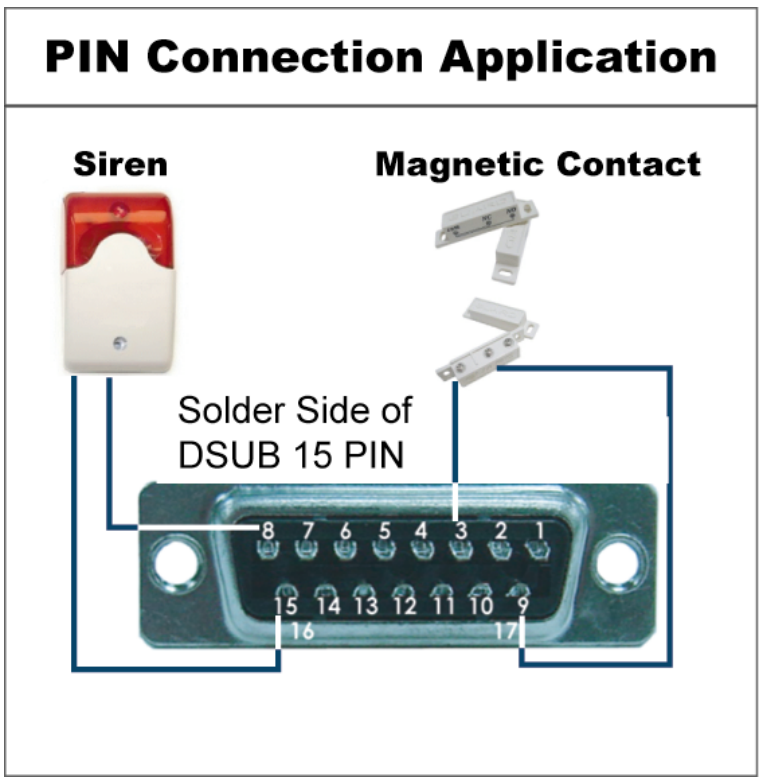

PIN Connection Application
Siren
Magnetic Contact
Solder Side of
DSUB 25 PIN
13 12 11 10 9 8 7 6 5 4 3 2 1
25 24 23 22 21 20 19 18 17 16 15 14

Siren: When the DVR is triggered by alarm or motion, the COM connects with NO and the siren with strobe starts wailing and flashing.

Magnetic Contact: When the magnetic contact is opened, the alarm will be triggered and the recording is on.

PIN	FUNCTION	DESCRIPTION
1	GND	GROUND
2~5	ALARM INPUT	Connect ALARM INPUT (PIN 2 – 5) and GND (PIN 1) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will be on. PIN 2 is Alarm 8. Once the alarm is triggered, the CH8 of the DVR will start alarm-triggered recording. PIN 3 is Alarm 6. Once the alarm is triggered, the CH6 of the DVR will start alarm-triggered recording. PIN 4 is Alarm 4. Once the alarm is triggered, the CH4 of the DVR will start alarm-triggered recording. PIN 5 is Alarm 2. Once the alarm is triggered, the CH2 of the DVR will start alarm-triggered recording.
6 ~ 12	PIN OFF	NA
13	EXTERNAL ALARM NO.	Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO. Attention: The voltage restriction is under DC24V 1A.
14	PIN OFF	NA
15~18	ALARM INPUT	Connect ALARM INPUT (PIN 15 – 18) and GND (PIN 1) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will be on. PIN 15 is Alarm 7. Once the alarm is triggered, the CH7 of the DVR will start alarm-triggered recording. PIN 16 is Alarm 5. Once the alarm is triggered, the CH5 of the DVR will start alarm-triggered recording. PIN 17 is Alarm 3. Once the alarm is triggered, the CH3 of the DVR will start alarm-triggered recording. PIN 18 is Alarm 1. Once the alarm is triggered, the CH1 of the DVR will start alarm-triggered recording.
19~24	PIN OFF	NA
25	EXTERNAL ALARM COM	Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO. Attention: The voltage restriction is under DC24V 1A.

- **For 4CH DVR**



Siren: When the DVR is triggered by alarm or motion, the COM connects with NO and the siren with strobe starts wailing and flashing.

Magnetic Contact: When the magnetic contact is opened, the alarm will be triggered and the recording is on.

PIN	FUNCTION	DESCRIPTION
1~2	PIN OFF	NA
3~6	ALARM INPUT	Connect ALARM INPUT (PIN 3 – 6) and GND (PIN 9) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will be on. PIN 3 is Alarm 1. Once the alarm is triggered, the CH1 of the DVR will start alarm-triggered recording. PIN 4 is Alarm 2. Once the alarm is triggered, the CH2 of the DVR will start alarm-triggered recording. PIN 5 is Alarm 3. Once the alarm is triggered, the CH3 of the DVR will start alarm-triggered recording. PIN 6 is Alarm 4. Once the alarm is triggered, the CH4 of the DVR will start alarm-triggered recording.
7	NC	Under the normal operation, COM connects with NC and disconnects from NO. But when any alarm is triggered, COM disconnects with NC and connects with NO. Attention: The voltage restriction is under DC24V 1A.
8	NO	Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO. Attention: The voltage restriction is under DC24V 1A.
9	GND	GROUND
10	RS485-B	Using RS-485 serial communication signals, DVR can be controlled by keyboard controller.
11	RS485-A	Using RS-485 serial communication signals, DVR can be controlled by keyboard controller.
12~14	PIN OFF	NA
15	EXTERNAL ALARM COM	Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO. Attention: The voltage restriction is under DC24V 1A.

APPENDIX 2 COMPATIBLE USB FLASH DRIVE BRAND

Please upgrade the firmware of the DVR to the latest version to ensure the accuracy of the following table. If the USB flash drive is not supported by the DVR, the "USB ERROR" message will be shown on the screen.

Note: Please use your PC to format the USB flash drive as "FAT32".

MANUFACTURER	MODEL	CAPACITY
Transcend	JetFlash 110	256MB
		512MB
	JetFlash V30	1GB
	JetFlash 150	1GB
	JetFlash V20	1GB
	JFV10	4GB
Kingston	DataTraveler DTI KUSBDTI/256FE	256MB
		512MB
		2GB
PQI	Cool Drive (U339)	256MB
		512MB
Apacer	HANDY STENO HF202	256MB
		512MB
	USB2.0 Flash Drive HS120	1GB
	USB2.0 Flash Drive AH320	1GB
	AH221	2GB
Adata	USB2.0 Flash Disk-PD1	1GB
	USB2.0 Flash Disk-RB15	1GB
	USB2.0 Flash Disk-PD4	1GB
	PD10	2GB
Sandisk	Cruzer Micro	128MB
		256MB
		512MB
		1GB
		4GB

APPENDIX 3 COMPATIBLE HDD BRAND

Please upgrade the firmware of the DVR to the latest version to ensure the accuracy of the following table.

MANUFACTURER	MODEL	CAPACITY	ROTATION
HITACHI	Deskstar 7K250, HDS722516VLAT20	160GB	7200 rpm
	HDS722516VLAT80	160GB	7200 rpm
	HDS722516DLAT80	160GB	7200 rpm
	Deskstar 7K250, HDS722525VLAT80	250GB	7200 rpm
	Deskstar 511DHT0021	500GB	7200 rpm
Maxtor	DiamondMax Plus 9, Model#6Y160L0	160GB	7200 rpm
	DiamondMax 10 6L160R0	160GB	7200 rpm
	DiamondMax 10 6L200R0	200GB	7200 rpm
	DiamondMax 10 6L200PO	200GB	7200 rpm
	MaxLine Plus Ⅱ, Model#7Y250P0	250GB	7200 rpm
	DiamondMax 10 6L250R0-3	250GB	7200 rpm
	DiamondMax 10 HDMA6L300RO-3	300GB	7200 rpm
Seagate	Barracuda 7200.7 Plus, ST3160023A	160GB	7200 rpm
	Barracuda 7200.8 ST3200826A	200GB	7200 rpm
	Barracuda 7200.8 ST3250826A	250GB	7200 rpm
	Barracuda 7200.8 ST3300831A/P	300GB	7200 rpm
	Barracuda 7200.8 ST3400832A/P	400GB	7200 rpm
	7200.9 ST3200827A/P	200GB	7200 rpm
	7200.10 ST3250620A/P	250GB	7200 rpm
	7200.10 ST3320620A/P	320GB	7200 rpm
Western Digital	Caviar SE WD1600JB	160GB	7200 rpm
	Caviar WD2000BB-00DWA0	200GB	7200 rpm
	Caviar SE WD2500JB	250GB	7200 rpm
	Cavir RE WD2500SB-01KBC0	250GB	7200 rpm

APPENDIX 4 TROUBLESHOOTING

Please refer to the table below for easy troubleshooting. The table describes some typical problems and also their solutions. Please check them before calling your DVR dealer.

- **FAQ (Frequently ask question)**

Questions	Solutions
No power	Check power cord connection.
	Confirm that there is power supplied from the outlet.
DVR is not working when pressing any button	You might be under “Key Lock” mode. Press any key and enter the password to exit this mode.
HDD detection failed	Replace with another HDD for testing.
	Replace with another HDD cable for testing.
	Make sure HDD “Master”, “Slave” mode is correctly set.
Can’t detect your USB flash drive	Replace with another USB flash drive for testing.
	Format the USB flash drive as FAT32 format and try again.
No live video	Confirm the camera is power supplied.
	Check the setting of the camera lens.
	Check the monitor’s video cable and connection.
	Check the camera’s video cable and connection.
No recorded video	Check if the HDD is installed and connected properly.
	Check the “MANUAL RECORD ENABLE” is set to “ON” , and the record function in the “CAMERA” menu is set to “ON” too.
Timer recording is not working	Check if “TIMER RECORD ENABLE” option is set to “ON” and the timer schedule has been arranged.
Motion detection recording is not working	Check if “EVENT RECORD ENABLE” option is set to “ON”.
	Check the detection function “DET” is set to “ON”.
	Check the detection area “AREA” has been setup.
Can’t play the recorded data on my DVR	There must be at least 8192 images of recorded data for playback to work properly. If not, your DVR will stop the playback. For example, if the IPS is set to 30, the recording time should be at least 273 seconds (8192 images / 30 IPS) for the playback to work properly.
Can’t backup the video with audio	Make sure the audio cameras are connected to the DVR channels which support the audio function (CH1, CH2, CH3 and CH4).
Can’t view the DVR images over the network with IE web browser	Check the DVR firmware version.
	Please choose to allow the web browser ActiveX or applet in the pop-out message.
Failed to backup the recorded files of the DVR from remote PC side. (For details, please see “Network Backup” at page 42.)	You need to be a supervisor to operate this function. For details, please see “Account” at page 50.
	Check if the network connection information is correct (IP Address / Port / User Name / Password).
	Specify the hard disk (HDD Number) and channel number (Channel) within which have the recorded data you need.
Failed to upgrade the firmware / OSD file	Check the USB flash drive is formatted to FAT32.
	Check the firmware / OSD file is correct.
Can’t use the IR remote control	Check whether if the batteries are installed or not.
	Aim at the IR receiving zone and try again.
	Check the lock button on the DVR front panel is switched to the right position.
Time and date settings return to default values	If the time and date settings return to their default values after the DVR is rebooted, please charge the DVR for at least 24-48 straight hours. Please contact your local retailer if the situation still occurs.
A new log is added in the system log other than the hourly logs.	A new log will be added in the system log when the HDD data is overwritten or the recording starts after DVR reboots.

APPENDIX 5 DEFAULT VALUE

- **Default Value**

Items	Default Value
• **DVR Side:**	
ADMIN Password	0000
Channel Title Display	ON
Event Status Display	ON
Image Size	CIF
Image Quality	BEST
Image Per Second (IPS)	120 (NTSC) / 100 (PAL)
Record Timer	OFF
Detection Timer	OFF
Date Format	Y/M/D
Daylight Saving	OFF
Camera – BRIG (Brightness)	128
Camera – CONT (Contrast)	098
Camera – SATU (Saturation)	128
Camera – HUE	128
Camera – COV (Covert Screen)	OFF
Camera – REC	ON
Detection	OFF
Detection - LS	07
Detection - SS	03
Detection - TS	02
Detection - RE	10
Detection - Alarm	OFF
Alert Buzzer	ON
Alert Buzzer Duration	5 seconds
Network - IP Address	192.168.1.10
Port	80
De-interlace	ON
Quad Dwell Duration	3 seconds
Full Screen Dwell Duration	3 seconds
Manual/ Event/ Timer Record	ON
Event Record IPS	120 (NTSC) / 100 (PAL)
Timer Record IPS	120 (NTSC) / 100 (PAL)
Pre-alarm Record	ON
Serial Type	RS485
Baud Rate	2400
Host ID	0
Auto Keylock (SEC)	30
Language	English (Multi-lingual OSD selectable)
• **AP Side:**	
User Name	admin
Password	admin
Port	80
IP Address	192.168.1.10